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The New England Surgical Society

THE SILENT KIDNEY.

BY J. DELLINGER BARNEY, M.D., F.A.C.S., BOSTON,

Chief of Service, Genito-Urinary Department, Massachusetts General Hospital; Instructor in Genito-Urinary Surgery, Harvard Medical School.

EVEN those whose chief interest is focused upon the urinary tract cannot avoid being impressed by the very large numbers of patients who, while suffering from one or another lesion of the kidney, present symptoms which are not directly referable to that organ. Recognizing that this phenomenon is so commonly met with, he who devotes himself to this branch of surgery is not often misled; on the other hand, he whose work lies chiefly in other directions sometimes overlooks this important fact with the result that time of inestimable value to the patient is lost.

It is with the object of drawing closer attention to the comparative silence of the kidney, even in the presence of extensive and long-standing disease, that I present this communication.

With the aid of modern diagnostic weapons the urologist has great advantages over some of his colleagues, but the latter by careful and frequent observation are many times able to arrive at astonishingly accurate conclusions.

Certain fundamentals must be borne in mind. Perhaps the most important lesson is that cystitis, hematuria and pyuria are only symptoms and must be so regarded. It is regrettable that even today these symptoms are all too often looked upon as a disease in themselves and vainly treated as such. While what is apparently primary cystitis may occasionally be seen, it is probable that the underlying cause has gone unobserved owing to careless or faulty methods of examination. The same is true of pyuria and hematuria.

Another important observation is that pain and even tenderness is often complained of only in the sound kidney, its diseased mate giving no subjective symptoms whatever. In discussing this point Osler[1] says, "There are instances of stone in which the pain has been confined to the sound side." It is in such cases that a diagnosis cannot be made even by the most expert without the use of special diagnostic equipment. I have personal knowledge of two such cases where the clinical symptoms were taken at their face value, with the result that in one the healthy kidney was removed and in the other the only kidney which the patient possessed was sacrificed.

Finally, it must not be forgotten that while a patient may have pain of considerable severity, the nature or location of this pain, together with other symptoms, may be such that the kidney is held guiltless. As a consequence lesions of other organs than the kidney are thought to exist and one or another intra-abdominal operation performed. As I have already pointed out, 18 per cent. of a series of 200 cases of stone in the kidney, "had had one or more operations, mostly (36) on the appendix, but including almost every other abdominal organ as well."[2] Other writers have shown an even larger percentage of diagnostic errors.

Almost any disease of the kidney may begin and end without once calling attention to the organ involved; on the other hand, it is remarkable that localizing symptoms may be of extremely short duration.

I wish now to take up the most common lesions of the kidney with special reference to the subjective symptoms which they may present. Let us first consider those conditions involving a faulty position of the kidney, either intermittent or permanent. The most common is that offered by the movable or so-called "floating" kidney, the position of which is generally abnormal but which varies greatly from time to time. When one considers the large number of low, movable and easily palpable kidneys seen in the year's work, especially among women, and the extremely few cases in which the mobility is a cause of symptoms, one must agree with Osler[1] that "in a large majority of cases there are no symptoms." Uteau[3] also remarks on the "silent movable kidney," and it has been our experience as well as that of Braasch[4] that "marked dilatation of the pelvis and ureter due to intermittent mechanical obstruction may be without pain." When the mobility of the kidney is such that its blood supply is interfered with or by a similar process its ureter is obstructed or narrowed, or when as a result of these conditions infection takes place, then and then only may the patient complain of pain. In fact, many of the pyurias one meets with have their source in a kidney such as has been described but which has never given rise to pain.

Turning now to the more permanent malpositions of the kidney, such as ectopia of various degrees, one may find there an equally pain-free history. While the ectopic kidney meets with disaster far more frequently than its healthy mate, we have all seen examples of this interesting condition which were discovered purely by accident. Judd and Harrington[5] report 10 such cases in a series of 19 ectopic kidneys which were so demonstrated and in which there were no symptoms whatever.

Infection of the kidney, particularly that produced by the colon bacillus, regardless of the inciting cause of the infection, may also be pain-free. One has only to recall the numerous cases of simple pyelitis seen in daily practice occurring in men, women and children to realize that this is no exaggeration. Nor does the chronicity of the infection necessarily influence the picture. As Osler[1] says, the forms of pyelitis "associated with the fevers rarely cause any symptoms, even when the process is extensive." Furthermore, Braasch[4] states that there is little or no pain referable to the kidney with chronic pyelonephritis and he quotes a statement by Thomas[4] that in 240 cases of pyelonephritis pain was present in less than 20 per cent. As a concrete example I may cite one of my own cases: A man of 60 was operated on for stricture of the urethra about 20 years ago. I have passed sounds at intervals for the past 17 years. During this time the urine has been very cloudy, containing much pus and innumerable colon bacilli. Catheterization of the ureters shows that the urine from each kidney corresponds with that passed from the bladder. The patient is in apparently perfect health, and there has never been the least pain or tenderness in either kidney.

Tuberculous infections of the kidney may be equally free from symptoms referable to that organ. I am sure you all recall many examples illustrating this remark. In cases without occlusion of the ureter, where the kidney freely and constantly drains its tuberculous urine into the bladder, the vesical irritability may be and often is the only symptom. So constant is this symptom that "it will be a conservative attitude to regard all cases of persistent irritability of the bladder with pyuria, particularly in young adults, as due to renal tuberculosis until the contrary can be proved" (Braasch[6]). As a matter of fact, reliable statistics of a large series of cases show that renal pain, either alone or coincidental with bladder irritability, occurs in only 25 per cent.[7] It should also be borne in mind that while the tuberculous organ may be persistently free from pain or tenderness, these symptoms together with an increase in size may be noted in the healthy side, a coincidence which has often caused much trouble to the patient if not to the surgeon. A case in point is that of a young woman of 20 seen by me three years ago for hematuria, bladder irritability and left-sided pain. Cystoscopy and subsequent operation showed tuberculosis of the right kidney which had never given rise to a symptom. The left kidney was and is still entirely healthy.

One may also see occlusion of the ureter with renal tuberculosis without kidney pain. Such a case was referred to me not long ago. She was a woman of 40 who had noticed a "bunch" in the right side for a few months. She vaguely remembered having some sort of "bladder trouble" years before. She had had no pain in either kidney at any time. Examination showed a distinctly enlarged, rather tender mass in the right loin. Cystoscopy showed an essentially normal bladder. The right ureter was completely occluded, no urine being obtained from it; normal urine was drawn from the left

side. Operation showed a much enlarged, entirely caseous right kidney with the ureter completely stenosed. This case also illustrates the faulty efforts of nature to heal renal tuberculosis. It is about as far as she ever gets in this direction. That occlusion of the ureter is not always a symptomless occurrence is shown by Braasch,[8] who reports 30 per cent. of a series of 69 such cases complaining largely of pain. It will be noted, however, that in the remaining 70 per cent. pain was either absent or insignificant.

Renal calculus may also be conspicuous by its silence throughout its course or for long periods of time; it may also call attention to itself by the production of pain in the opposite kidney.

On this point C. H. Mayo[9] says "many patients with stone in the kidney have no pain, and 65 per cent. with stones in both kidneys have pain on one side only." Osler[1] makes the statement that "the large coral calculi may excite no symptoms. . . . (pain) is usually on the side affected, but may be referred to the opposite kidney, and there are instances in which the pain has been confined to the sound side."

This point was illustrated by a patient whom I saw about a year ago. He complained of constant and sometimes sharp pain in the right side. Because of this and on account of a pyuria cystoscopy was performed with catheterization of the ureter on the supposedly affected side. Subsequent x-ray with this catheter in place showed nothing to suggest stone in this kidney or its ureter and the urine was negative. In the left kidney, however, there was a stone the size of a walnut which I subsequently removed. This case illustrates the necessity of catheterizing both ureters simultaneously and also the desirability of having a preliminary x-ray in all suspicious cases.

The comparative silence of renal calculus is demonstrated by another of my cases in which I performed nephrectomy for a stone the size of a large lemon. The patient was otherwise in perfect health, had been accepted by the Army Draft Board, and had seen active service in France. The only history of pain was a dull aching sensation of intermittent character in the loin of the affected side, beginning a few months before he was seen by me. Multiple stones of varying size may likewise give no pain at all or only during brief intervals; meantime complete destruction of the kidney with its transformation into a thin-walled sac of pus is progressing steadily. In general it may be said that the smaller the stone the more severe and the more frequent the pain is likely to be.

Most writers remark upon the unreliability of pain in the diagnosis of new growths of the kidney. Rossi[10] speaks of pain as an unreliable element in the differential diagnosis of malignant tumors of the kidney in children. Osler[1] says: "Pain is an uncertain symptom. In several of the largest tumors which have come under our observation there has been no discomfort from beginning to close."

Gilbride[11] remarks on the absence of local signs and symptoms in the early stages of malignant disease of the kidney, while McCown[12] says that pain other than renal colic caused by the passage of clots is not a common symptom in cases of papilloma of the renal pelvis.

The "dull pains sometimes noted in kidney tumors" is mentioned by Heppner,[13] whereas Laurie[14] says pain occurs in 32 per cent. of cases of tumor of the kidney, a view which practically coincides with that of Hyman.[15] The latter found pain an initial symptom in 30 per cent. and present at one time or another in 40 per cent. In a series of 74 cases which I[16] reported some years ago pain was the initial symptom in 25 and I said "that pain is an almost constant feature is shown by the fact that it occurred at some time during the course of the disease in 63 out of the 74 cases." It is obvious, therefore, that while pain may be the initial symptom in many and of frequent occurrence it may, on the other hand, never occur at all. It should also be borne in mind, that, barring infection, which is extremely rare, new growths of the kidney in and of themselves do not cause pain. This symptom is induced largely by the passage of blood clots or pieces of the growth and is therefore of sudden onset and of brief duration.

I have in mind an old man whom I saw at the clinic some years ago who came there simply because he felt "all in." In the course of a routine examination in the medical department it was found that he had blood in his urine and a large mass in the region of the right kidney. There was no history whatever of pain. I subsequently and successfully performed a nephrectomy on this patient, removing an enormous hypernephroma of the kidney.

The internist or the general practitioner generally is the first to see the cases of nephritis, glomerular or interstitial, which give rise to hematuria or albuminuria. While a careful physical examination and the blood pressure will often suffice to explain the condition of the urine, it is none the less interesting to consider the infrequency of symptoms directly referable to the kidneys. I can find no reference to this point in a brief examination of the literature. It has been my good fortune, however, to see several cases of hematuria due to nephritis of one type or the other, but only in one or two instances can I recall that pain was a factor. It was then only a dull ache in the small of the back. I have regarded it always as an evidence of a passive congestion of the kidney due to increased intrarenal tension and a stretching of the fibrous capsule. The operation of decapsulation, advised and practiced by the late Dr. Edebohls, gave relief to this pain for a greater or less length of time, demonstrating that the

stretching of the capsule was the prime factor in the condition.

I saw not long ago a woman of 30 with marked hematuria. This had gone on for several days with no localizing symptoms and no other symptoms except a severe and persistent headache. The urine showed a large amount of blood and albumin together with many casts. The blood pressure was nearly 200 mm. systolic. Cystoscopy showed a stream of blood coming from the right ureter.

Another case was seen of a man who entered the hospital with excessive hematuria. Shortly after admission he became comatose and died in a few hours. There was almost complete anuria. Autopsy showed advanced chronic interstitial nephritis.

One or two other conditions may be mentioned which have their origin in the kidney but which may attract little or no attention to that organ. I refer to polycystic kidney, generally bilateral, and which may and in fact does, as it is of congenital origin, go on for years with no symptoms whatever. Pain may eventually intervene, being due to infection, the passage of blood clots or hyperemia. But as Braasch[6] says after analyzing a series of such cases, "Unless interference with urinary drainage or widespread infection occurs, the pain is not severe."

The second condition is that known as varix of the renal papilla, which gives rise to gross hematuria but which may be entirely free from pain throughout its course. While these cases are uncommon and diagnosis difficult they may present themselves unexpectedly and should be borne in mind. It may be said that cases of this sort may sometimes be responsible for the cases of so-called "essential" hematuria, this term being in the same category as "idiopathic," which being interpreted often means "I don't know."

One may well ask why the healthy kidney should give rise to pain and tenderness and why it becomes enlarged. As its fellow becomes destroyed, more and more work is thrown upon the well side. This results in compensatory changes, not only in the size of the organ, but in the amount of blood which flows through it. Until these compensatory changes are well established, often a slow process, the kidney is in a condition of passive congestion, similar to that found in the liver and other organs in cardiac decompensation. That this compensatory change in the kidney is very real, I have been able to demonstrate experimentally in dogs. At the first operation one kidney was either removed or its ureter ligated. Careful measurements of the length and breadth of the opposite kidney were taken at the same time. At varying intervals after this operation the remaining kidney was measured again, and in almost every instance a very appreciable enlargement in both diameters was found. Another proof of the compensatory changes in the kidney when its mate is removed by operation or disease is its ability to excrete as much or more urine than the two kidneys together. This was shown very decisively in my work upon dogs. They were kept in metabolism cages for a long period of time before operation, receiving a measured daily amount of food and liquids. A careful record of the daily quantity of urine was kept. After the removal of one kidney the same routine was followed out. At first the 24-hourly amount was considerably less than before operation, but it gradually increased until at the end of a few weeks, often after only a few days, the total quantity was as great as, or greater than before operation. This phenomenon is of common occurrence in the surgery of the human kidney.

If the various lesions of the kidney which I have enumerated so often give rise to no symptoms referable to that organ, why do they ever do so? Or in other words, what is the cause of the pain and tenderness? I believe the chief factor is to be found in a sudden and violent stretching of the capsule, brought about by either inflammatory changes, by circulatory changes, or by intermittent obstruction to the outflow of urine from the kidney. If, and when such an increase in intrarenal tension occurs the capsule will be stretched and pain produced. There is evidence of this in the relief of pain following Edebohls' operation of decapsulation of the kidney in chronic interstitial nephritis, in which the intracapsular pressure is certainly much increased. On this basis we can explain the pain or the lack of it in infections, whether tuberculous or pyogenic; in the compensatory changes of the healthy kidney it certainly offers adequate explanation of the pain. In cases of renal stone pain is experienced, at least in an acute form, only when the calculus attempts to force its way out of a calyx or out of the pelvis. While these structures are insensitive to ordinary handling, as I have found in one or two instances, any attempt at dilatation produces severe pain. Furthermore, while the calculus is trying to force its way through a narrow lumen the urine is dammed up in the cavity behind it, resulting not only in a distention of that cavity, but also in a more or less general increase of intrarenal pressure with undue tension on the capsule. In renal tumor we have an explanation of the pain by this increase of pressure by the passage of, or attempts to pass, either large blood clots or fragments of the growth.

Another factor of importance in the production of pain, if not of tenderness, is the irritation of the peripheral nerves, especially the branches of the lumbar plexus which lie posterior to the kidney on or within the psoas muscle. How often we see pain arising from a focus in the kidney radiating to groin, testicle or thigh. While this nerve irritation may be produced by pressure, it seems far more likely that inflammatory changes are at the bottom of most of it.

While there are probably other factors to be considered in the production of these symptoms, I feel confident, after considerable study of the question, both in men and animals, that the explanations offered are sufficient for most cases.

REFERENCES.

1 Osler and McCrae: Principles and Practice of Medicine, 9th ed.
2 Barney: Internat. Jour. Surg., Dec. 1, 1918.
3 Uteau: Progrès Médicale, Aug. 30, 1919, xxxiv, No. 35.
4 Braasch: J. A. M. A., 1919, lxxiii.
5 Judd and Harrington: Surg., Gyn. and Obstet., May, 1919, xxvii, No. 5.
6 Braasch: Mayo Clinics, 1916, viii.
7 Braasch: J. A. M. A., 1912, lviii.
8 Braasch: J. A. M. A., 1920, lxxv.
9 Mayo: Mayo Clinics, 1919, xi.
10 Rossi: Rivista di Clinica Pediatrica, Dec., 1918, xvi, No. 72.
11 Gilbride: J. A. M. A., 1920, lxxv, p. 16.
12 McCown: *Ibid.*
13 Heppner: Zeit. f. urolog. Chir., Mar. 14, 1921, vi.
14 Laurie: J. A M. A., 1921, lxxvi, p. 1601.
15 Hyman: Surg., Gyn. and Obstet., 1921, xxxii.
16 Barney: Boston Med. and Surg. Jour., Feb. 27, 1913.

THE PARAMOUNT PROBLEM IN PROSTATECTOMY.

BY ARTHUR L. CHUTE, M.D., BOSTON.

In the past few weeks I have been going over the 560 cases of prostatectomy that my records show I performed between December, 1904, when I did my first operation of that sort, and August 1 of this year. I had at first intended to give this Society a statistical paper based on an analysis of these cases, but in spite of the fact that the consideration of such a number of prostatectomies, done by an individual operator, probably has more value than statistics made up from the consideration of an equal number of cases done by several operators, yet the value even of individual statistics gathered during the ever-changing developmental period of any operation has, I believe, more historical interest than present-day value.

A study of this series of cases has brought out a number of things of interest as well as of importance which lack of time makes it quite out of the question to present to you. There is one point, however, that the study of these cases impresses upon me more forcibly than ever, namely, that, while our functional results, whether a patient empties his bladder or not, and whether or not he has control of his urine, depend upon the technic of operation, the question of whether we have a high or low mortality after prostatectomy depends for the most part upon our management of the renal, and to a certain extent in conjunction with this, upon the management of the cardiac condition of our patients. In my opinion the great danger of prostatectomy comes about through the tendency of the kidneys to shut down under certain conditions. This tendency to shut down is met in varying degrees of intensity and varies from a slight diminution in the urinary output to an almost total anuria.

The more I see of this problem the more I am convinced that it is not always the result of the same process. The most common cause of this is a passive congestion, the result of the sudden release of the back-pressure against which a kidney in a patient with any considerable residual urine has had to accustom itself to work. It is apparently not necessary that one have dilated ureters to have this increased intravesical tension transmittted to the kidneys. To this element of passive congestion there is often added a certain amount of infection, the result of an ascending pyelonephritis, while to one or both of these two may be added a third element, if the patient has taken ether, and that is, the toxic effect which the excretion of ether produces, presumably on healthy renal cells, very definitely on diseased renal cells. A common example of this last is the great danger that attends the use of ether with patients suffering from chronic nephritis.

According to my observation, any of these three types of renal involvement may bring about a toxic condition that may go on to a fatal ending. They produce this result by rendering the renal cells unable to extract either water or waste materials from a blood plasma, presumably of normal concentration. The first type, that due to passive congestion, is the commonest and the one that is most amenable to treatment. It is difficult to say which is the more serious of the other two; naturally the first and third affect both kidneys equally, while the pyelonephritis, if it is of the ascending type, may affect but one kidney. An intense double pyelonephritis is presumably more dangerous than a mild poisoning of the renal cells, the result of the excretion of ether. On the other hand, the cases that have seemed to me the most difficult to treat are the bad post-ether cases.

In the toxic condition due to renal insufficiency we see a scanty urine, nausea and usually vomiting, a dry tongue, usually furred, sometimes red and glazed, soft distention of the abdomen, and often a great deal of hiccough. There is no temperature in many cases; in those cases, however, due to pyelonephritis there is temperature. The mind, at first clear, becomes rather fogged as the disease progresses. One may have quite an active delirium. In the worst cases treatment seems to have little effect and they usually have a fatal outcome in from three to five days. In my hands the only effective therapeutic measure in this condition has been to get large amounts of fluid into the circulation; in the milder cases this may occasionally be accomplished by giving large amounts of water by mouth or by rectum, but in only the mildest cases can water be taken by mouth. In the more acute cases salt solution must be given under the skin, often in large amounts and extending over a long period. My hypothesis is that the injury done the kidney cells in these cases has rendered them unable to extract either

the water or waste products from a blood, probably at first of normal concentration, though the vomiting and lack of fluid intake must soon render this blood of greater than normal concentration, and thus a vicious circle is established. According to my understanding of this condition, the blood must be kept dilute until such time as the kidney has recovered from its injury and is able to handle a blood of normal concentration.

The length of time during which one has to give salt solution under the skin is to my mind a very fair index of the time that it takes the kidneys to get into normal condition; this time is shorter for the kidneys deranged by passive congestion, and longer for those deranged by inflammatory invasion. This time may vary from a few days up to a month or more, and the amount of salt solution necessary to disintoxicate the patient may vary from 750 c.c. once a day, to 1000 c.c. three times a day. The amount of urine has to be brought up to the point where the elimination is sufficient to disintoxicate the patient and keep him free from toxicity, as evidenced by the disappearance of his vomiting, hiccoughs, distention, and mental symptoms. Sometimes the daily elimination of 100 ounces of urine will do this; more often it will have to be between 150 and 200 ounces, and occasionally I have had to get the urinary output even higher to accomplish this disintoxication. The length of time that the salt solution must be given will depend, as I have said, on the time it takes the kidney to get into condition where it can do the work in a manner approaching the normal. There is no definite way to determine when this point has been reached, and if, on cutting down the fluid, one finds that the symptoms recur, it is necessary to return to its use. It is not very unusual to see a relapse after some days without salt solution; likewise a recurrence may follow any complication of convalescence, such as an epididymitis or pyelitis; repetition of the same treatment will usually bring about recovery.

The amount of fluid one can safely give depends on the capacity of the patient's heart. Ordinarily the appearance of edema, which is first seen in the scrotum, is a sign that the limit of safety has been reached. The edema that is sometimes the precursor of an epididymitis may be mistaken for the edema of over-saturation with fluid. Most men with reasonably good hearts will take all the fluid necessary to disintoxicate them without the appearance of edema. In the occasional case, one is forced to diminish the amount of fluid because of the strain put upon the heart, only to see the toxic symptoms increase; one may have to change back and forth several times, now favoring the heart, now the kidneys, until either the kidneys function properly or the decompensation of the heart leads to a fatal outcome.

Just now there is a man under my care who has had a two-stage operation. The first operation was on August 14; the second on August 30. Although his bladder was opened under novocain at his preliminary operation, and the prostate was enucleated under spinal, he had a toxic condition following both operations. In this case, judging from the amount of albumin in his urine, his toxemia was due to a pyelonephritis. On both occasions he straightened out after about a week's treatment. Two and one-half weeks after his second operation, after a time in which he had been getting on very well, he had a second intoxication, due to renal insufficiency, from which he is now suffering and from which the outcome is in question. With this last attack, pushing fluid was attended with marked cardiac symptoms. Now if we push the salt solution to the point where it does away with his toxic symptoms we overburden his heart.

There is another complication that I have seen on a few occasions when one has been forcing water by mouth; that is, the appearance of a more or less sudden cardiac upset, not unlike an acute dilatation, with poor, rapid pulse, cyanosis, and vomiting usually of large amounts of fluid. A fullness, sometimes even a definite tumor, will be found in the epigastrium. The use of a stomach tube under such conditions usually has shown a stomach considerably distended with fluid; the cardiac symptoms are evidently due to the embarrassment this has produced on the heart by pressure. Ordinarily just the emptying of the stomach and the temporary cutting down of water by mouth were all that have been necessary. A few patients, however, have had to have the stomach emptied several times.

While the treatment of this toxic condition is fairly successful, it is much more satisfactory to prevent it, if possible, and to this end the two-stage operation is of great value. Doing a preliminary cystostomy under novocain does not eliminate the possibility of renal insufficiency by any means; in fact, it is often seen following this, but it is of the type due to passive congestion, the one most amenable to treatment. Preliminary cystostomy under local anesthesia diminishes the probability that we shall have to combat the inflammatory pyelonephritis type and does away with the possibility of the toxic post-ether type.

Another point in the prevention of this kidney complication is the use of spinal anesthesia in the place of ether. Only last month this was illustrated very forcibly in the case of a man of 84, who had been drained suprapubically in another city some weeks previously. The suprapubic opening had been allowed to contract down to a small fistula, and the enucleation of his prostate was out of the question through this opening. After some time of catheter drainage I determined to do a perineal operation under *sacral* rather than *spinal* anesthesia, as the patient was a frail, old gentleman, with a poor

heart. Although my anesthesia seemed good, he complained rather bitterly and I reluctantly had him given a little ether. In spite of the fact that we were forewarned and did what we could to ward off any renal insufficiency, his kidneys gradually shut down; the use of a sufficient amount of fluid to prevent toxemia was more than his heart could stand and he developed edema and died. You may say that he died of a poor heart, if you wish; it was a poor heart, too poor to handle a sufficient amount of fluid to allow his kidneys to keep this man from becoming toxic. In my opinion his death was the result of the use of ether and its effect on his kidneys. Had I used spinal instead of sacral anesthesia, I believe I should not have lost this man. Many of these men have a heart that has a narrow margin of safety and it is wise that they be given a preparatory course of digitalis, if this is possible. Naturally in many of these cases this is not possible and we have to do what we can to tune the heart up at the time that we are spurring the kidneys on. The use of digitalis especially and caffein sodium benzoate to a lesser degree is employed primarily as a heart stimulant, but their diuretic action is also very important. In the same way the use of enemas when these men are very distended has an indirect action on the heart, relieving it from the pressure of a distended abdomen. Patients in this condition may have to have several enemas a day to control this toxic distention, sometimes six or eight. The use of enemas seems, on the whole, to be more efficacious for this purpose than the use of drugs that act on the bowels, such, for instance, as pituitrin, though this is at times useful.

The frequency with which these toxic manifestations, due to kidney insufficiency, have appeared in this series of cases, and the number of resultant fatalities, which has been overwhelmingly greater than those occurring from operative shock, hemorrhage, or embolism, lead me to consider this toxic condition, due to renal disturbance, the paramount problem met in prostatectomy.

THE IMPORTANCE OF PYELOGRAPHY IN RECOGNIZING THE CAUSES OF OBSCURE ABDOMINAL SYMPTOMS.

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MANY cases of abdominal pain, both acute and chronic, have their origin in the urinary tract and are not infrequently unassociated with urinary symptoms or any gross abnormality in the urine. Conversely, cases present urinary symptoms when the underlying cause is outside the urinary tract, but involve it by means of pressure or traction, as seen in abdominal and pelvic tumors. Another example is to be seen in the gastric crises and urinary disturbances of early "tabes."

Since the wider application of pyelography and ureterography great advances have been made in the study of renal and ureteral pathology, and by this procedure we have an extremely accurate method of diagnosing or excluding lesions of the urinary tract.

I have ventured to present this subject briefly to this Society as it has an equal interest for the general surgeon and the urologist.

While in some lesions of the urinary tract the symptoms are typical and suggestive of the location of the lesion, unfortunately in many they are quite the reverse, being suggestive of trouble in an organ or region quite remote from the one involved, which makes the clinical history as obtained from the patient often atypical and misleading. This is particularly true in regard to pain, both in regard to lesions within the urinary tract and those without. It is not infrequently seen in renal tuberculosis in which the healthy kidney may become enlarged and tender from compensatory hypertrophy, and because it is enlarged, palpable and tender, has been judged the diseased one and removed, with disastrous results, without the evidence furnished by a preliminary cystoscopy. Other examples are pains referred to the bladder in various renal lesions and to the loin in beginning epididymitis.

Pain in the acute lesions is much more suggestive, as in renal colic, but here again is a fruitful source of error when occurring in the right side, as the symptoms are often confused with appendicitis and gall-bladder lesions. Twenty-five per cent. of our cases of ureteral calculus, in which operations were performed at the Massachusetts General Hospital, had had a previous operation for appendicitis, or some other supposed intra-abdominal lesion, without relief.

Given an attack of supposed renal colic, is it an appendix? Is it due to a calculus, or to a kink in the ureter, or a torsion of the kidney? The examination of the urine does not always give us a clue, as in hydronephrosis and kinks and strictures of the ureter it is frequently normal. Nor is the ordinary x-ray conclusive when negative, or even when showing a shadow supposedly in the urinary tract. All such shadows must be verified by the x-ray catheter or by pyelography. Again, certain calculi are not demonstrable by the x-ray and symptomatically cannot be diagnosed from kinks, and ureter strictures, without having recourse to the ureterogram.

Of equal importance is the differential diagnosis of the lesions of the upper abdomen. Pain

may be present in either upper quadrant and the physical examination negative or misleading. It is frequently impossible to judge whether a tumor of the right upper quadrant is a distended gall-bladder, a cyst of the mesentery, a lesion of the kidney, or an intra- or retro-peritoneal growth. The same is true of pelvic tumors where an ectopic kidney may simulate some growth of the uterus or ovary. In all such conditions the urinary tract should be studied by the pyelogram, and it should be employed before resorting to exploratory operations. While the employment of the pyelogram in diagnosis is constantly increasing, it is not universal, nor are its possibilities and indications fully realized by the profession at large. It requires the coöperation of a trained cystoscopist and x-ray operator, and an adequate x-ray plant, a combination not always accessible.

The early history and development of pyelography is interesting. The first attempts to localize shadows presumably in the urinary tract were made by Schmidt and Kolischer of Chicago in 1901, who introduced a fused wire stylet into an ordinary ureter catheter. This was followed by the x-ray catheter, and later by the injection of various solutions impervious to the x-ray. The earlier solutions employed were the organic silver salts, argyrol, collargol, etc. The objection to these was that they were suspensions and not infrequently left a residue which caused considerable pain and irritation, and in some cases severe damage to the kidney necessitating operation. Deaths have been reported following pyelography. These untoward results were probably due to the employment of too much solution under undue pressure.

Thorium was next employed in a 15 per cent. solution. It is a colorless solution and gives a good shadow, but some toxic results were reported following its use. At present we employ a 12½ per cent. solution of sodium iodide, which is comparatively non-irritating and non-toxic and gives good definition. The early untoward results were used as an argument against the procedure as a dangerous and painful one.

This method is not entirely free from danger and discomfort, but when properly carried out in suitable cases these may be minimized to a very great extent and are no contraindication to the use of this very valuable diagnostic aid when indicated. The patient should always be kept quiet for several hours after the procedure. Some cases have no reaction whatever; in others the simple passage of a ureter catheter induces a renal colic. For this reason I always regard it as a hospital procedure. The fluid should be injected slowly, preferably by the gravity method, and the injection stopped on the first appearance of discomfort, as if colic is induced it is difficult for the patient to remain quiet while the x-ray is being taken, and spasms of the ureter may occur which will give an unsatisfactory or misleading picture.

While in many cases simultaneous bilateral pyelograms are done with no untoward results, this method is to be condemned, specially if the kidneys are known to be damaged, as alarming anuria has followed this technic. It is better and safer to inject each side at a different sitting if a bilateral picture is desired. The picture should include a ureterogram, as well as a pyelogram, in order that no pathology of the ureter be overlooked. This is done by withdrawing the catheter and injecting the ureter.

By this method unexpected anomalies, such as double ureter and double renal pelvis, are occasionally met with. Pyelography is not to be advised in tuberculous cases, in the acute urinary infections, nor in large hydronephroses when the diagnosis is obvious by ordinary ureter catheterization. Nor in those patients whose physical condition is much reduced, and those who are known to react violently to instrumentation. Skillful technic will accomplish much in the latter type, as in the extremely nervous patients.

Much depends upon the proper interpretation of the plates, and what may appear to be an abnormal renal pelvis is really a filling defect due to an insufficient amount of fluid. This can be corrected by the introduction of more fluid if the plate can be developed at once. I have also seen a blood clot in the renal pelvis simulate the abnormal pelvis caused by renal tumor. This was demonstrated by a second pyelogram which showed a normal pelvis.

The following cases, given very briefly, illustrate well the points I wish to make. The first three, recently seen by the writer, are of interest because of the extensive renal pathology found. They belong to the group of cases presenting pain in the upper quadrants of the abdomen, with a negative physical examination, without any so-called urinary symptoms or any gross abnormality in the urine. Such cases often pass through many hands, undergo operations upon unoffending organs, the kidney remaining unsuspected because of the lack of urinary symptoms and a normal urine.

Case 1. Male, 23. Clerk. Complaint, pain in left loin. Numerous attacks during last six years. The more recent severe and associated with nausea. Last attack lasting four days. There have never been any urinary symptoms. Seven months ago operation for appendicitis. According to patient's statement the surgeon told him he had a left-sided appendix. No relief from operation. In fact, attacks have been worse since. Examination: Well-developed young man. Abdomen, chest, genitals and extremities normal, except for right rectus scar from previous operation. Urine: Catheter specimen clear. Acid. 1022. No sugar. Albumin S. P. T. Sediment, rare blood cell, rare hyaline cast. Cystoscopy: Normal bladder and ureters. Left ureter catheterized without obstruction to pelvis of kidney. Steady rapid

flow of clear urine 120 c.c. Sent to x-ray. Fifty c.c. of 25 per cent. sodium bromide solution injected into pelvis of left kidney.

X-ray report and pyelogram: No evidence of stone. Right kidney outline normal. Left kidnel pelvis after injection markedly enlarged, calices dilated. Ureterogram: definite kink in left ureter near renal pelvis. Diagnosis: Left hydronephrosis due to kink of ureter. This case was seen in the consultation clinic at the Massachusetts General Hospital. He was referred back to his own surgeon, who verified the above findings by operation, removing an entirely destroyed kidney. (Plate 1.)

port and pyelogram: Right kidney very low, shadow of kidney pelvis extends below crest of ilium. Pelvis large and apparently distended. Calices dilated and have lost most of their cupping. Ureterogram: Shows sharp kink of ureter near to renal pelvis, very suggestive of abnormal renal vessel. And a second angulation further down near the level of sacro-iliac joint. Small dense shadow which may be stone in lower calyx. Diagnosis: Hydronephrosis due to kinked ureter from abnormal renal vessel. Fixation of kidney and freeing of ureter advised. (Plate 2.)

CASE 1. PLATE 1.—Large left hydronephrosis.

CASE 2. Male, 42. Foreman. Complaint, attacks of pain in right loin for five years, at times three to six months' interval between them. Last attack ten days ago. Severe, associated with nausea. Pain does not radiate. No urinary symptoms. Has been told he had gallstones. Examination: Well-developed man. Chest, abdomen, genitals and extremities normal. Urine normal. Cystoscopy: Bladder and ureters normal. Right ureter catheterized to pelvis of kidney without obstruction. Sent to x-ray. Right renal pelvis injected with 15 c.c. of sodium bromide solution without causing pain. X-ray re-

CASE 3. Male, 38. Carpenter. This patient was referred from the Out-Patient Department of the Hospital for examination of the urinary tract as a possible cause of attacks of pain in the left loin and back. As he had worked as a painter, lead poisoning was suggested as a cause. No indication of this was found, however. Complaint: Attacks of pain in the left loin for the last fifteen months. Five years ago had a similar attack. Severe enough to make him stop work. They were not associated with nausea and there were no urinary symptoms. The pain has been referred to the groin during the latter

attacks. The x-ray was negative for calculus and the urine clear. No albumin. No sugar. No sediment. Examination: Thin man. Chest, abdomen, genitals and extremities normal. Cystoscopy: Bladder normal. Right ureter catheterized without obstruction. Left ureter, catheter stops about two inches short of the renal pelvis. Rapid, steady flow of urine from each side. Pyelogram shows dilated right renal pelvis, and apparently a kink or stricture of the left ureter which prevents the entrance of the catheter into the pelvis, although there are some opaque areas in the left kidney region suggesting hydronephrosis. Diagnosis: Left hydronephrosis, due to kinked ureter. Moderate right hydronephrosis. Operation on left kidney advised. February 2, 1922, operation by Dr. R. F. O'Neil. Gas-oxygen-ether anesthesia. Left kidney explored; found enlarged, but looked and felt like a good secreting organ. Left renal pelvis much enlarged and ureter found definitely kinked and firmly adherent to pelvis. This was freed by dissection, the ureter straightened, and the kidney suspended. Convalescence uneventful. Postoperative diagnosis, bilateral hydronephrosis, moderate on right, extensive on left, due to kinked ureter. Pyelogram, seven weeks after operation, shows markedly dilated left renal pelvis but ureter apparently coming from pelvis in straight line. Renal function 15 per cent. on left and 20 per cent. on right of phenolphthalein excreted in fifteen minutes. A slight infection of the left kidney occurred after the second cystoscopy as shown by a cloudy urine and some frequency of micturition. This condition has gradually improved and there have been no attacks of pain since operation.

The next three cases illustrate unexpected congenital abnormalities of the urinary tract discovered by cystoscopy and pyelography. (Plates 3-4.)

Case 2. Plate 2.—Right hydronephrosis due to kinked ureter.

Case 4. Private case of the writer's. Mrs. X, 28. Referred by Dr. J. L. Huntington as to cause of continuous pain in left loin for four and a half years, which began during her only pregnancy. Pain is continuous in left loin and is not relieved by lying down. Some frequency of micturition. Two months ago she had a bad fall on the ice, since which time all symptoms have been much exaggerated. Examination: Thin woman. Right rectus scar from appendix operation thirteen years ago. Both kidneys easily palpable, left more easily than right. Neither is tender. Pelvic examination negative.

On standing, definite signs of general ptosis and faulty posture. Tenderness left side of spine

CASE 3. PLATE 3.—Bilateral hydronephrosis. Kinked ureter on the left.

CASE 3. PLATE 4.—Same case after operation on left ureter. Showing ureter coming from pelvis in straight line.

in region of second lumbar vertebra. Catheter specimen of urine normal. Cystoscopy: Urethra tight. One ureter orifice on right, two on left. Pyelogram shows reduplication of ureter and renal pelvis on left, normal on right. Both ureters on left functioning, one more than the other. In view of the faulty posture she was seen in consultation by Dr. R. B. Osgood, who fitted her with a support which has given her complete relief from all symptoms. Diagnosis: Ptosis of enlarged, abnormal left kidney, with probable laceration of some of the muscle attachments to the transverse process of the lumbar vertebrae. (Plate 5.)

CASE 4. PLATE 5.—Double renal pelvis and double ureter on the left.

CASE 5. Similar case. Palpable, tender mass in right side with pain. Pyelogram shows double renal pelvis on right. Ureterogram shows fusion of ureters on right just above entrance into bladder. Diagnosis: Ptosis of large abnormal right kidney. Symptoms relieved by ptosis belt. (Plate 6.)

CASE 6. Male, 34. Dull, intermittent, nonradiating pain with sharp exacerbations in left iliac regions. Sent in for diagnosis and question of operation. Pyelogram showed large kidney on left and small infantile type on right. Case illustrates the importance of estimating the renal function of each kidney before contemplating nephrectomy. In such a case the small right kidney would be unable to sustain life alone. Diagnosis: Probable movable large left kidney. No operation was done. (Plate 7.)

CASE 7. Woman, 35. Intermittent attacks of severe pain in right upper quadrant; did not radiate. Occasional vomiting with attacks. No other digestive symptoms. Never jaundiced. Has had three or four severe attacks. No urinary symptoms except for acute retention accompanying one of the attacks when she was catheterized for a week. This was three weeks previous to her first operation. Examination: Negative except for slight tenderness in right upper quadrant in front. No costo-vertebral tenderness. Urine negative. X-ray negative. Diagnosis of probable gallstones was made. Operation advised and performed. Gall-bladder and ducts found negative. Patient had two more attacks of pain after operation while in

bed similar to those she had had before. Right pyelogram showed low right kidney with slight dilatation of pelvis and suggestion of kink in ureter near pelvis. Kidney was suspended. No attacks since. Second pyelogram shows kidney in good position. Had pyelography been carried out in this patient before the exploratory operation on the gall-bladder, the real cause of pain would have been apparent and she would have been saved one operation. (Plates 8-9.)

CASE 5. PLATE 6.—Low large kidney on right. Double renal pelvis and ureter.

CASE 6. PLATE 7.—Large left kidney. Small right kidney, infantile type.

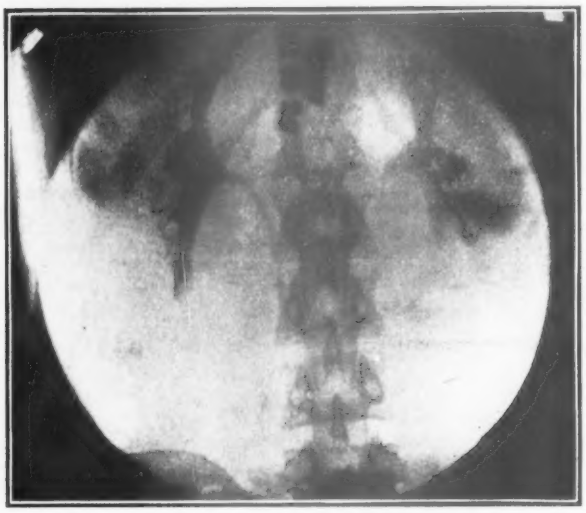
CASE 8. Plates show the marked distortion of the renal pelvis seen in bilateral polycystic kidney. (Plates 10.)

The foregoing series of cases demonstrate lesions in the urinary tract which were the cause of more or less obscure symptoms, in most instances attributed to other organs and in which the diagnosis was made by the pyelogram. In many cases we have demonstrated the lesions to be outside of the urinary tract by a perfectly normal renal pelvis and ureter outlined by the pyelogram. I will not take your time to show any such.

CASE 7. PLATE 8.—Ptosis of right kidney, beginning hydronephrosis.

CASE 7. PLATE 9.—Same case after suspension of the kidney. Previous operation on gall-bladder without benefit.

Occasionally a case may be encountered where a tumor or cyst involves the lower pole



CASE 8. PLATE 10.—Showing the marked distortion of the renal pelves in bilateral polycystic kidney.

of the kidney without encroaching on the renal pelvis. Here we might have a normal renal pelvis and the pyelogram would fail to show any lesion of the kidney. Such cases are rare and the diagnosis will have to be made by palpation or x-ray or by exploratory operations. Such a cyst or tumor in the upper pole would cause a downward displacement of the kidney which would be at least suggestive of renal involvement, although such displacement might be caused by a retro-peritoneal tumor.

With the above exception we have in pyelography a very reliable diagnostic procedure and one which should be employed in all doubtful cases of abdominal tumor, or of chronic or paroxysmal abdominal pain before resorting to exploratory operations.

KINKS OF THE URETER DUE TO ABERRANT VESSELS.

BY ARTHUR H. CROSBIE, M.D., BOSTON.

THERE has been much written in the past about abnormalities of renal circulation. Post mortem studies have revealed numerous variations from the normal blood supply of the kidney. The only abnormality that concerns us pathologically is abnormal vessels crossing to the lower pole of the kidney, which may obstruct the outflow of urine from the kidney pelvis. Any vessel, whether artery or vein, crossing the ureter to the lower pole of the kidney may obstruct. These vessels may be branches of the renal vessels or come direct from the aorta and vena cava. The origin of such vessels does not matter clinically and I never make any attempt to trace their origin. The most common obstructing vessel is an artery, rarely a vein. However, I recently operated on a case where there were both a good-sized artery and an accompanying vein. The position of the obstructing vessels is anterior to the ureter, producing obstruction close to the junction of the ureter and pelvis.

So long as the kidney remains in normal position such a vessel may do no harm, but as soon as the kidney becomes ptosed or rotated, or both, then obstruction occurs. It is my belief that the so-called floating kidney never produces symptoms so long as the ureter is free to follow, but if there is a vessel which fixes the ureter when the kidney sags then there is obstruction and symptoms. It is never wise to do a nephropexy on a floating kidney, unless it can definitely be proved that the sagging of the kidney has produced a kink.

Symptoms: For many years the presence of aberrant kidney vessels producing a kink of the ureter and consequent blocking off of the flow of urine from the kidney pelvis has been recognized as a cause of Dietl's Crisis. It was often suspected in such cases and a definite diagnosis only made at the time of operation. What was not suspected before we became proficient in pyelography was the fact that aberrant vessels were responsible not only for many cases of Dietl's Crises, but also produced other pathological conditions, such as recurring attacks of pyelonephritis, chronic hydronephrosis without crises, occasionally haematuria, and bacilluria. As we have recognized for a long time, anything which prevents the free flow of urine anywhere in the urinary tract tends to lead to infection and the infection having come it stays, in a greater or lesser degree, until free drainage has again been established. Symptoms in the case of kinks produced by aberrant vessels are usually directly in accord with the acuteness of the obstruction and the amount of infection. The symptoms may be any of those referable to kidney irritation. There may never be anything more than frequency of urination due to a chronic kidney infection with no pain higher than the bladder to point to the affected side. It means that in order to make a proper diagnosis very careful study must be made with pyelograms, such as I will speak of later. I have seen two cases in which the only symptom was haematuria. Pain on the affected side may or may not be present, depending on the acuteness of the obstruction. A thing to be remembered is that the pain is not necessarily so severe as that of Dietl's Crisis, which comes only in the very acute cases of obstruction. The pain may resemble the pain of gall-bladder disease or appendicitis, more often the latter, as it is usually low down below the kidney region. It often is referred downward to the bladder region. The pain may or may not be accompanied by frequency. If the condition is on the right side it is rare that the patient escapes appendectomy or gall-bladder operation, or both, before the real cause of the trouble is diagnosed. However, it is not wholly by the pain that we are led to

suspect the true trouble. It is rare that the urine does not give us an inkling. There, too, the trouble may be easily overlooked as the urine may look perfectly normal and contain no albumin. The doing of a careful urinary sediment, however, will almost always reveal the presence of a few red blood cells and a few leucocytes or both. It is hard to understand how such an important examination, as the urinary sediment, is so much neglected. So long as there is no albumin the sediment is rarely done. I saw a man the other day who had just passed an examination for $10,000 life insurance. His urine was clear and sparkling. It contained no albumin but the sediment showed a few red blood cells. Cystoscopic examination showed an early carcinoma of the bladder. Red blood cells do not belong in the urinary sediment and should be investigated.

When we reach the severe case with very acute colic and palpable hydronephrosis the diagnosis is easy. Many such cases have repeated attacks until eventually the kidney is entirely destroyed. Spitzen asks how it is that if an aberrant vessel produces an acute hydronephrosis the hydronephrosis may go down and temporary relief be experienced. He feels, as is true, that the more the pelvis is dilated against the vessel the more the ureter is compressed. The reason that partial recovery takes place is that with an acute attack the patient stays in bed and to a certain extent relieves the compression on the ureter. Then, too, the more complete the shutting off of the ureter the quicker the kidney ceases to excrete. As is well known, if a ureter is completely blocked off by a ligature the result is not hydronephrosis, but merely the kidney ceases to excrete. In all cases of hydronephrosis the obstruction has not been complete. To sum up, the symptoms, as I said at first, may be any of those due to renal irritation.

Case of Miss M.—The ureter catheter has straightened out the kink.

Pathology: There may be no pathology in

the early case. From this there may be all degrees of hydro- and pyonephrosis up to the point where there is nothing but a pus sac left. I am firmly convinced that a large number of totally destroyed kidneys that we see at operation are the direct result of obstruction due to aberrant vessels.

The urine almost always shows something in the sediment,—bacteria, leucocytes, red blood cells, any one, or all. Rarely the sediment shows nothing, but as a rule by the time the condition is diagnosed there will be something in the sediment.

The diagnosis can usually be made when pyelograms are done. The history and the symptoms may suggest it, but the surest way is by properly taken pyelograms. The method I use is as follows: Both ureters are catheterized, the catheters being passed all the way to the kidney pelvis. After urine has been collected pyelograms are taken with the patient merely holding the breath. In this first pyelogram a kink could easily be missed as a stiff ureter catheter can easily straighten out a kink and all that would be seen would be the presence of whatever hydronephrosis there is. A second pyelogram is then made with the ureter catheter withdrawn a few centimeters below the kidney pelvis. The patient is told to take a deep breath and hold it. This pushes the kidney down and brings out the presence of a kink, if one is present. Three or four cubic centimeters of solution are injected just before the pyelograms are taken, thus making sure that the ureter is filled. This method will frequently reveal a kink that otherwise would be missed. One of the lantern slides that I will show brings this out very prettily.

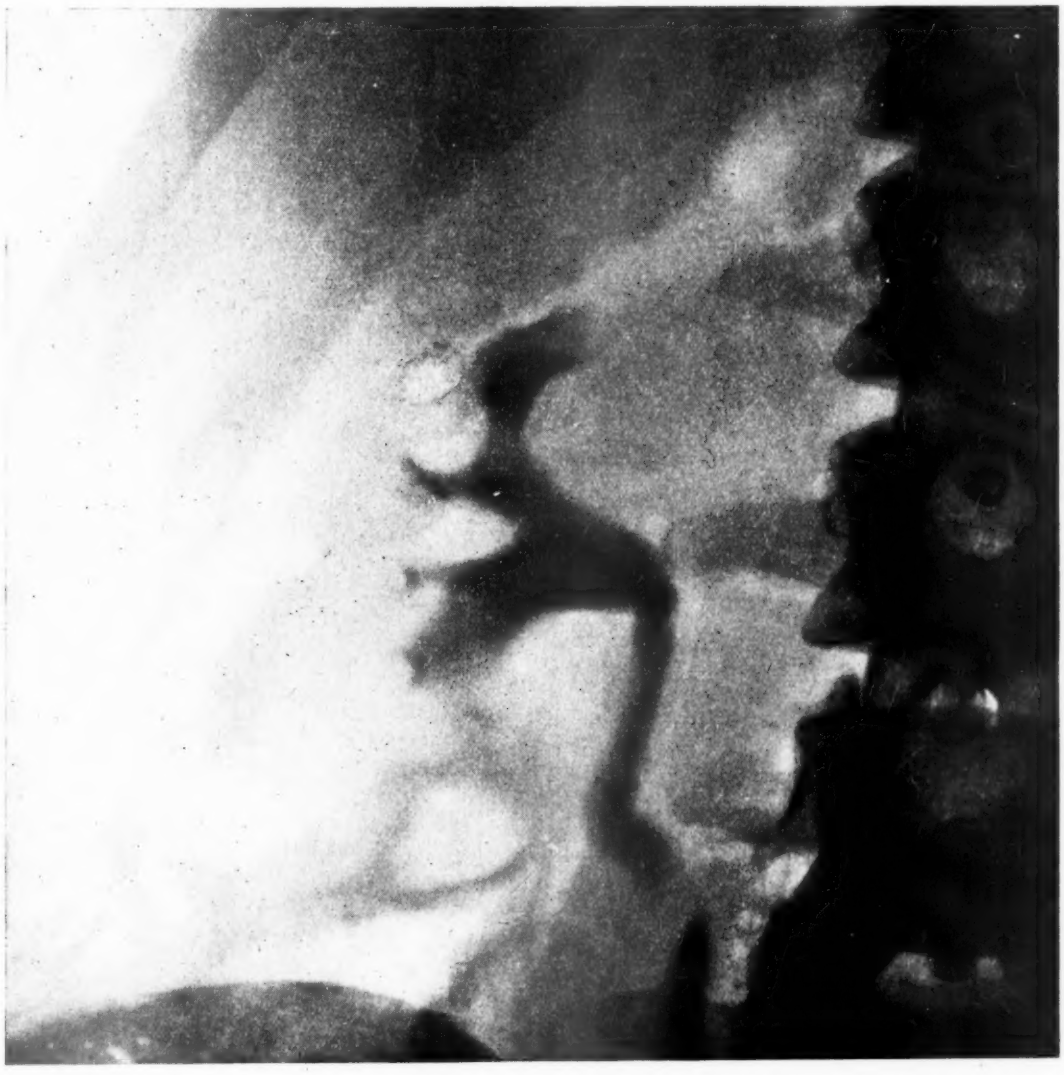
Case of Miss M.—With the ureter catheter withdrawn showing the kink due to a large aberrant vessel.

The diagnosis having been established or suspected the only treatment is operative. Cases of this sort that are neglected are very apt to lead, in time, to total destruction of the kidney. The kidney is bound to be below par and is a

fertile field for infection of any kind. I am sure that it not infrequently is responsible for infection with the tubercle bacilli and for the presence of stones. Several times in doing a nephrectomy, for a badly diseased kidney, I have found an aberrant vessel that probably was the starting point of the trouble.

In operating on these cases I no longer use the posterior vertical incision that was formerly used for nephropexy. It does not give free enough exposure of the pelvis and ureter unless the kidney is very movable and the patient thin. The best incision is a free oblique incision as is used for nephrectomy. Even in a very fat person this allows good exposure of kidney pelvis and ureter. In all of these the pelvis and ureter should be exposed, so that the presence of even a very small vessel may be detected. The procedure from here must be guided by what we find. If there is not hydronephrosis and not a great deal of infection I merely divide the vessel and do a nephropexy. If, however, as is often the case, there is a large hydronephrosis, after cutting the vessel I do a nephrostomy and insert a rubber tube through the kidney substance to the kidney pelvis. This tube is left in for about a week. In a case of this sort I do not do a nephropexy. I feel that after a nephrostomy the kidney will be held in good position by the adhesions.

It is very important that no operative procedure should be undertaken, no matter how evident the diagnosis is, until pyelograms are taken. I will cite a case that bears out the importance of this. A woman of forty-nine was brought to the Cambridge Hospital with a severe attack of left renal colic, duration three days. During the last year she had had six similar attacks. On the left side of the abdomen there was visible a large tumor that was quite evidently a large hydronephrosis. This woman was very sick and her temperature was up, so that it was certain that there was infection, as well as hydronephrosis. It was quite evident that opera-



Kink of the ureter at uretero-pelvic junction due to aberrant vessel. This patient had attacks resembling appendicitis.

tion was imperative. Before operating I catheterized the ureters and did pyelograms. This brought out the fact that the right kidney was a congenitally atrophic one which was not functioning at all. No fluid could be injected into the hydronephrotic left pelvis. It now became evident that what kidney tissue there was left on the left side must be conserved. Exploration revealed a very large infected hydronephrosis. The ureter was found to be collapsed. On tracing it to the pelvis a large artery was found going to the lower pole of the kidney. As soon as the vessel was tied and cut, the ureter dilated to the size of a finger. A nephrostomy was then done, with the escape of a large amount of foul pus containing urine. That was a year ago and the patient has been in perfect health since. This case shows the importance of a complete examination. I have seen many kidneys removed which were no worse than this one. Nephrectomy here would, of course, have resulted fatally.

In cutting a large vessel going to the lower pole of the kidney one must make sure that it is causing obstruction. It is not possible to cut a large artery without seriously interfering with the circulation of the lower pole of the kidney. In a case I did recently the artery was as large as the radial. There was a large hydronephrosis and the ureter was obstructed so that it was impossible to introduce a catheter into the pelvis. None of the sodium bromide used in the pyelograms had entered the pelvis. The ureter in this case had collapsed below the vessel. When the vessel was cut the ureter at once filled, showing that the obstruction was due to the constriction of the vessel. This artery was so large that I felt considerable concern on cutting it. As soon as it was cut a sharp line of demarcation appeared across the lower pole of the kid-

Aberrant vessel completely occluding the ureter so that none of the sodium bromide enters the kidney pelvis.

ney. I was sure that I would get necrosis of this part of the kidney. I did a nephrostomy and the patient had a most uneventful recovery.

Three years ago I operated on a kidney in which I am sure that there was sloughing of the lower pole. This case is interesting as being one which had hematuria and fever as the only symptoms. He was a man of twenty-eight who had his first attack while in the trenches in France. He had a febrile attack accompanied by hematuria; this lasted about two weeks. He had another attack shortly before I saw him. There was nothing to indicate which side was affected. Pyelograms showed a kink of the left ureter with considerable hydronephrosis. At operation a good-sized artery was found going to the lower pole and constricting the ureter. This was cut. No change in the kidney was noted, though it may have been there. A nephrostomy was done. The convalescence in this case was very stormy. On the fourth day he had a chill with rise of temperature. There was considerable pain on the left side. There was free drainage of foul pus for about four weeks. Eventually everything quieted down and he got well and has remained so ever since. He is a patrolman and leads an active life.

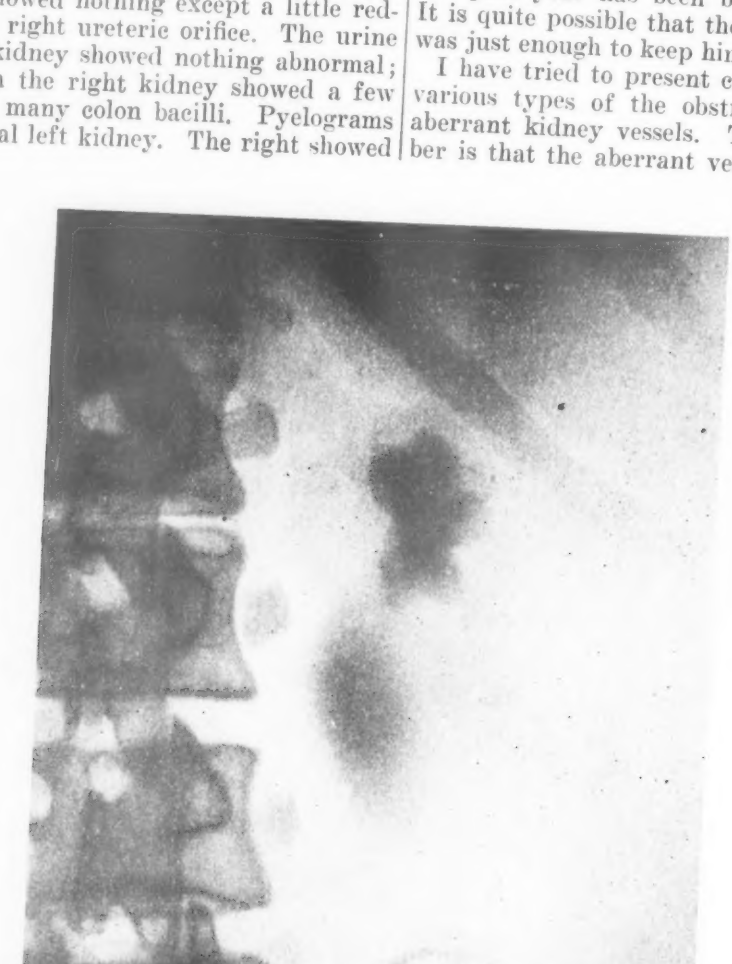
Let me now cite a case showing how slight the subjective symptoms may be. A man of thirty-eight, married, denies venereal, for the last two years has felt run down. Tuberculosis was suspected, but no evidence could be found. He stopped work for nine months, but felt no better. A few weeks before I saw him he had had an attack of frequent urination, which lasted about a week. On account of this he was sent to me for examination. At the time I saw him his frequency had disappeared and he was without symptoms, except that he lacked pep. Physical examination was negative. His urine

Sharp kink of the ureter with hydronephrosis due to nephroptosis and aberrant vessel.

was clear and on examination nothing abnormal was found except the presence of a few leucocytes and many colon bacilli. Cystoscopic examination showed nothing except a little redness about the right ureteric orifice. The urine from the left kidney showed nothing abnormal; the urine from the right kidney showed a few leucocytes and many colon bacilli. Pyelograms showed a normal left kidney. The right showed a definite kink of the ureter with considerable ptosis of the kidney. There was no hydronephrosis. Operation was advised, although I was skeptical about it having much effect on his general health. A small artery was found constricting the ureter. This was cut and a nephropexy done. The first month after leaving the hospital the patient gained ten pounds. At the end of two months he returned to work. At that time the leucocytes and colon bacilli had disappeared from the urine. The operation was a little over a year ago and his health during the past year has been better than for years. It is quite possible that the mild renal infection was just enough to keep him below par.

I have tried to present cases that would show various types of the obstruction produced by aberrant kidney vessels. The thing to remember is that the aberrant vessel may produce all grades of obstruction. It should always be suspected until it is proved not to exist. There is no cardinal symptom, except in the very acute cases. The best way to detect kinks is by taking pyelograms with the catheter partially withdrawn.

Judgment must be used in cutting large vessels going to the lower pole of the kidney. A very large vessel should not be cut unless very definite obstruction can be demonstrated.



Case of kinked ureter due to aberrant vessel causing marked hydronephrosis.

DISCUSSION OF THE FOUR PAPERS ON GENITO-URINARY SUBJECTS BY DRS. BARNEY, CHUTE, CROSBIE AND O'NEIL.

DR. WILLIAM W. TOWNSEND, Burlington: I want to express my thanks to the essayists of the genito-urinary papers. Dr. Chute's paper was a very important one, bringing out as it did the life-saving properties of salt solution; and I think New England is indebted to Dr. Chute for the inauguration of the use of salt solution in postoperative cases. I am sure in my personal work I have saved a number whom I would not have saved had I not used the salt solution. I am under the impression that Dr. Chute still believes that the salt solution should be administered under the skin. With us we have been using the salt solution directly in the vein, limiting the time of administration and watching the right heart carefully during the administration. The advantage of administering the salt solution by the vein, we think, is that it is very much less painful. Dr. Chute and others have recently advocated the use of a novocaine solution prior to the hypodermoclysis.

At the first meeting of this Society I had the privilege of reading a paper on pain in the right lower quadrant, and today I was glad to hear Dr. O'Neil emphasize pain in the right upper quadrant, from a genito-urinary viewpoint. I am sure we have all seen cases of gall-bladder disease and gallstones operated upon in which the pain complained of before operation was unrelieved and later a renal pathology was demonstrated. Gallstones are found in a great many gall-bladders.

The warning that Dr. O'Neil sounded with reference to pyelography being a hospital procedure I thoroughly concur with. The mechanics of pyelography are very important. We used collargol in the early days. We have also used thorium. We are now using bromide of soda. Bilateral pyelography, I believe, as Dr. O'Neil does, should never be done at the same operative seance. There should be an interval of several days between. I have in mind a man on whom we did a pyelography on the right kidney and three days later we did the left, and he promptly developed an anuria which lasted for five days, and we had trouble in saving him from death.

We believe traumatization has a great deal to do with the unfavorable results in pyelography. The frequent immediate pain which one sees is, we believe, due to the entrance of the tip of the ureteral catheter into one of the calices of the kidney.

The method of injection is a moot question. Some believe in the gravity method, and others in the syringe. We believe the safest method is that of gravity and not raising the burette more than a foot or so. I will say that in patients with manifest evidence of crippled kidneys we believe pyelography is contraindicated.

Dr. Eisendrath has done more work on the study of aberrant vessels than any man in this country, and the frequency of their presence is sufficient ground for a paper such as Dr. Crosbie has presented. We all know that the troublesome hemorrhage, which one often gets following nephrectomy for other causes than an aberrant vessel, is due, no doubt, to the tearing off of an aberrant vessel from the upper or lower pole of the kidney.

DR. SELDOM B. OVERLOCK, Pomfret, Conn.: I am not a genito-urinary surgeon so I will have very little to say in this discussion. I want to emphasize the importance of Dr. Chute's conclusions drawn from his large series of cases. Conclusions, such as these, drawn by men who confine their work to a special branch of surgery, are not only of value to other men doing the same kind of work but also a guide to the general surgeon who is obliged to do a certain amount of this incident to general surgical practice.

Conditions in the management of prostatics have changed gradually but markedly in the last twenty or twenty-five years. Early in the period mentioned the patient was usually brought in as an emergency case for the relief of acute retention of urine. It was the surgeon's part to relieve this situation in some way. In many instances there had been repeated attempts at catheterization outside and the patient presented himself with a distended bladder, a traumatized urethra, and many times thoroughly narcotized. If it was found that catheterization was not possible, sometimes he might be aspirated, but in most instances he was operated upon as soon as possible to relieve the acute condition. If postoperative renal failure ensued and the patient died it was felt that all possible had been done for him and the result accepted.

As more work of this kind was done and the cases more thoroughly studied, it was found that if suprapubic drainage was employed the operation could be delayed until the patient was in better condition for operation and by this procedure the mortality lowered. Further observation showed that if care were taken to secure kidney function by medication and full ingestion of liquids, there was less danger of renal postoperative failure and again the mortality was lowered. Finally the circulatory and cardiac problem was worked out and the operation on prostatics and the management of these cases has been brought to its present stage of efficiency.

DR. GEORGE W. W. BREWSTER, Boston: I would like to speak of a case which occurred in my service at the Massachusetts General Hospital as it illustrates the importance of what Dr. O'Neil has said of the aid of a pyelogram in diagnosing the cause of obscure abdominal pain.

The patient was a woman thirty-six years old who gave a history of twenty years of obscure, not very severe, upper abdominal pain. She was operated on first for the removal of the appendix in 1909; four years later for adhesions of the duodenum and colon; and again in 1914 for adhesions between the ovary and cecum. None of these operations were followed by any relief of the pain.

Last April she entered the Massachusetts General Hospital for study as to the cause of the pain in the right upper quadrant. X-ray examination was suggestive of a duodenal ulcer, but not positive. Before doing another abdominal operation she was examined in the G. U. Department. They reported that there was a positive kink in the right ureter with some interference to the outflow of urine. A fixation operation was recommended. She was then operated on and the right kidney fixed—an Edebohls operation.

The subsequent history of this patient has been that of entire relief from pain with a gain of fifteen pounds in weight.

DR. JOHN H. CUNNINGHAM, Boston: It is quite evident, from what Dr. Brewster has said, that the

genito-urinary surgeon may be of some use to the general surgeon. Today there is no branch of surgery that possesses more accurate means of diagnosis than does urology; and from what has been said in regard to errors in diagnosis in connection with patients with pathological elements in the urine, or indefinite symptoms in the upper quadrant of the abdomen, it would seem quite evident that the employment of cystoscopy, ureter catheterization, study of the separated urines, renal functional tests, blood chemistry, and roentgenology; or in other words, the commonly employed methods of investigation of the urinary tract, would have overcome these errors and prevented operation in some instances, and directed the surgeon in the proper course in others.

Rarely have I heard a better presentation of the importance of preoperative study and preparation of the prostatic patient than that by Dr. Chute. Those of us especially interested in the subject of prostatectomy have come to the realization that there is a required standardization of the physical requirements which must be reached before the operation of prostatectomy can be considered safe. As has been pointed out, the prostatic patient usually has a reno-cardiac complex which must be carefully appreciated and adjusted as far as possible, to have the patient in suitable general condition to stand the operation. The chief factor in bringing this about is bladder drainage, either by an indwelling catheter or by suprapubic drainage, together with forced fluids for the purpose of lessening renal infection and general toxemia, which usually exists with prostatic obstruction. With bladder drainage, forced fluids, catharsis, and proper nourishment, improvement will be noted in the kidney output, and in the character of the urine, especially in regard to solids and the phthalein tests. At the same time, the blood chemistry will show a diminishing nitrogen retention. It is only when the kidney output and character of the urine reaches a satisfactory point, and the blood chemistry shows little above the normal nitrogen retention, that the operation may be considered with safety. While most cases require but a week or two of drainage to produce the required adjustment, there are some instances in which the bladder must be drained for months before anything like the required standardization can be brought about. I have, at the present time, a patient in the hospital from whom I have removed the gland, who required suprapubic drainage over a period of nine months before the various tests could be brought to a point where operation could be safely carried out. It is the appreciation of the facts which Dr. Chute has pointed out and which I have simply tried to emphasize, that has been responsible for lowering the mortality in connection with prostatic operations.

Dr. Barney has spoken of disease in one kidney causing pain in the other kidney. This I have observed in many instances. I may mention two patients as illustrations. One patient was a man who had pain in his right kidney, and the x-ray plate showed a stone at the inferior isthmus of the left ureter. The surgeon operated upon the right side, the side upon which the pain existed. No stone was found. Because of this the operation was prolonged; the patient became septic and when I saw him he was dying. Examination of the plate revealed the fact that the stone was on the left side, and it developed that the surgeon held the plate wrong side toward him, making the shadow in the left ureter conform to that of the right, or in other words, making the error of making the picture conform to the symptoms. Following death a stone was found in the left ureter, as the picture actually showed. This error is quite as apt to occur with the films now used as with the old photographic plates, and is a matter to be borne in mind. The other illustration was a young man with all the symptoms of renal tuberculosis and the tubercle bacillus present in the urine, who had pronounced pain in his left kidney. A cystoscopic examination was made in one of our large hospitals in Boston; the bladder found tubercular, and neither ureteral opening could be found. With the establishment of a definite diagnosis of tuberculosis of the bladder, and because the pain was present in the left kidney region, he was advised to enter the hospital and have the left kidney removed.

He later came into our hands, and at the first cystoscopic examination we were unable to catheterize his ureters because of the extensive tuberculosis of the bladder. He was put on bladder lavage and a few weeks later both ureters were catheterized, and while his pain persisted severely in his left kidney, we found a normal urine coming from it, and demonstrated that the right kidney was in reality the site of the renal tuberculosis. The right kidney was removed and was found to be extensively tubercular. Had the patient acted upon the advice which he had originally received, the wrong kidney would have been cut down upon.

In regard to Dr. O'Neil's remarks about the various solutions employed in pyelography, I would like to briefly refer to an investigation which my associate, Dr. Roger C. Graves, has been conducting in this connection. He has shown that the sodium bromide solution commonly used is sufficiently hypertonic to produce extreme edema when applied to the mucous membrane surfaces. This he has demonstrated experimentally. He has shown, therefore, that a 12 per cent. solution of sodium iodide is atonic with 8 per cent. sodium bromide and does not produce these tissue reactions, and because of its heavier molecular weight, is just as satisfactory, from the point of view of x-ray density, as the more concentrated bromide solutions commonly used.

We are endeavoring, and have reason to believe that we will soon have a pyelographic solution possessing antiseptic properties, which we will all agree would be ideal.

Dr. Arthur L. Chute, Boston: Dr. Barney has called attention to the well-known fact that renal pain depends, as far as we know, upon the quick distention of the renal capsule, more particularly that part of the capsule covering the kidney pelvis. That is why we see the excruciating pain of calculus sometimes stop literally in a minute when a ureter catheter is worked by a calculus in the ureter and the residual distending that kidney pelvis is drawn off. I think Dr. D. F. Jones will recollect a case we saw together in which a renal colic stopped just as soon as we had introduced a catheter beyond a stone and withdrawn a few c.c. of the 30 c.c. that the pelvis contained. The pain of compensatory hypertrophy is the result of the congestion and swelling of a kidney that is suddenly called

upon to take over the work of its fellow. Large tumors in which the capsule is distended *slowly* are rarely attended with more than discomfort, because of the slow distention of the capsule.

The papers of the other readers touch on what I believe is the great problem in urinary surgery today; that is, the early recognition and treatment of hydronephrosis. This offers a great field for conservative renal surgery. I have reason to believe we shall soon be able to recognize the various types of hydronephrosis early and to carry out appropriate plastic operations. While I feel sure that some cases of hydronephrosis are due to aberrant renal vessels I have wondered of late if we were not crediting this anomaly with doing more harm than it actually deserves. In my opinion one often finds anomalous vessels which do not offer any obstruction and therefore no satisfactory explanation for the hydronephrosis.

I have been especially interested recently in some cases of hydronephrosis, in which there was a so-called "high implantation of the ureter" into a much dilated kidney pelvis. In one instance there was a stenosis of the ureter at its point of entry into the pelvis. It has occurred to me that this stenosis might well be the result of a pyelitis and a subsequent strictured pelvic outlet. The frequency with which we see bilateral pyelitis would account satisfactorily for the bilateral appearance of hydronephrosis, which one finds on the evidence of pyelograms is not so very rare.

I have little to say in closing the discussion on my paper. I have not put in novocain recently in the subcutaneous salt infusion; perhaps I should. There can be no doubt that the infusions are more or less painful in many instances. As for putting the salt solution into a vein, there are, in my opinion, three objections to this. In the first place, I fear the tax on the heart that may come from putting 1000 c.c. suddenly into the circulation of a person who has not lost any blood; when given subcutaneously a reservoir is formed from which the fluid may be absorbed as required. Again, when one is giving salt solution three times a day I should suppose the available veins would soon be exhausted. This objection, however, is theoretical on my part as I have never attempted to give it in this way. Lastly, when a patient has to have salt solution often, one must depend on house officers or nurses to give it at times. I doubt the wisdom of having people with relatively little experience try the intravenous introduction.

Dr. Richard O'Neil, Boston: I wish to subscribe to everything which Dr. Chute has said about the employment of fluid, especially given sub-pectorally, in these prostatic cases. These cases with overdistended bladders not infrequently show signs of uremic poisoning after decompression; they become slightly delirious, with a dry tongue and abdominal distention. In this type particularly the employment of fluid is indicated and the results are most striking.

I also wish to agree with Dr. Cunningham in regard to the importance of the estimation of the non-proteid nitrogen in the blood. I am rather inclined to pay more attention to this than to the amount of phthalein excreted. I recently had a case under my care when the non-proteid nitrogen was 144. Under drainage and diuretics the amount fell to 59. and remained thereabouts. Although this amount was high the patient went through a prostatectomy successfully.

I am much obliged to Dr. Brewster for reporting this case which illustrates well the importance of considering the kidney as a cause of right upper abdominal pain. Had a pyelogram been done in the first place in this case the patient would have been saved several operations.

I was extremely interested in Dr. Crosbie's remark concerning the ligation of an extra vessel to the kidney. I had a similar experience in the case of the wife of a physician who suffered from left renal hematuria. In this case after the ligation of an aberrant vessel of the lower pole, the bleeding ceased. A previous decapsulation had had no effect upon the hemorrhage.

Dr. H. L. Smith, Nashua: I think that what is said about the use of water after kidney cases applies almost equally in other cases in surgery.

Original Articles.

CONVALESCENCE — A CHRONOLOGICAL REVIEW: IV. FROM 1917 TO 1920.

BY JOHN BRYANT, M.D., BOSTON.

In 1917, two years after the opening of the Burke Foundation, there appeared two important papers upon convalescence, based upon the work of the Foundation, one by Sturgis and the other by Brush. Sturgis,[10] writing as the President of the Foundation, reported that about 6000 patients per year were being cared for at White Plains. The buildings themselves were placed advantageously, in the gently rolling 60-acre tract comprising the Foundation. There were being accepted the following classes of convalescents:

1. Men in large groups.
2. Boys from 12 to 16.
3. Colored patients.
4. Cardiacs.
5. Severe surgical dressings.
6. Lung diseases.
7. Drug addicts.
8. Tuberculous patients (specialized).
9. Rheumatism.
10. Special borderline nervous or mental cases.

The aim was to increase the proportion of formative, constructive, preventive convalescence. At this time, 1000 surgical dressings per month were being cared for. The importance of recreation and occupation were realized. Thus Sturgis reported that "occupation is not chiefly diversional, but remedial, reconstructive, curative, convalescent—normalizing. It is not a side issue; it costs—it is our best medicine,

and is prescribed in writing for more than a fourth of all our patients." Young cardiac cases were considered the foremost problem. Next in value was placed the keeping of subnormal people at a reasonable though limited level of production through "preventive convalescence." The basis of this work appeared to be properly supervised vacations. The results of convalescent care at the Burke Foundation were summarized as follows:

1. Speedier and more complete recovery of those who have been acutely ill.
2. End-results improved.
3. Preventive and holding recuperation.

The second of these Burke Foundation papers of 1917, by Brush,[4] emphasized the importance of differentiating between home and institutional convalescent care, urging that more attention be given to the problem of home convalescence. Brush stated that "millions in funds, given for convalescence essentially, are being held back awaiting an answer to the question of whether there should be more country institutions or more application in the homes and the working places, or both—and in what proportion." Brush believed that with approximately 30 per cent. of all hospital patients and 6 per cent. of all dispensary patients needing convalescent care, about one-half of those in each group would accept such care. On this basis, there would in 1917 be a total of 40,000 to 70,000 convalescent patients per year for the city of New York. There were available, institutions which could provide beds for but 10,000 patients. In one New York hospital 25 of the bed patients were being given convalescent hospital care, a basis which would mean over 100,000 convalescents per year to be cared for from the entire city. Brush realized that thousands of these patients must be cared for in their homes if at all; he stated that the two methods were not interchangeable, and that convalescent institutions should not be clogged by those more properly cared for in the home, especially in view of the fact that home care costs only about one-third of that in convalescent institutions. He also pointed out the community health value of improved home convalescent care, quoting as an example the conclusion of the Boston Dispensary that 94 per cent. of the homes visited were unfavorable for proper convalescence. Brush disapproved of costly food for convalescents and said that every-day food in moderate or even limited variety completely sufficed for proper convalescence; he attributed failure to attain convalescence to inadequate medical care rather than to the simple diet advised. In fact, Brush believed that "the greatest thing in convalescence is normality, especially in regard to food common sense." Under treatment Brush emphasized:

1. Extension of social service for the purpose of properly choosing patients for home or institutional care.
2. Necessity for special clinics such as those to care for Hebrews.
3. The desirability of having convalescent endowments apply part of their income to home extension convalescence care.

In 1918, Mann[7] reported upon the circulatory reactions in convalescence after infectious diseases. He concluded that the pulse reactions were not of any great value but that the systolic blood pressure reaction was important, since attention to this reaction indicated that with increased health increased work was required in order to produce the "delayed summit" reaction.

Powell,[9] in 1919, remarked upon the importance of physical exercise in convalescence, referring especially to intermittent rest, and graduated work under the control of a physical expert.

Hexter,[6] also in 1919, writing as executive director of the Federated Jewish Charities of Boston, deplored the difficulty of obtaining reliable information upon the subject of convalescence.

Bryant,[5] in 1920, reported upon a system of physical development used by him in the treatment of convalescents in the wards of the Walter Reed General Hospital during the war, and Bott[2] reported upon the mentality of the convalescent patient.

One phase of the characteristically irritable and hypersensitive mentality of the convalescent patient is well illustrated in the following quotation from a recent autobiography.[1] "I was too weak and uncomfortable to realize all that had happened; and what I suffered from the smallest noise I can hardly describe. I would watch nurse slowly approaching and burst into a perspiration when her cotton dress crinkled against the chintz of my bed. I shivered with fear when the blinds were drawn up or the shutters unfastened; and anyone moving up or down stairs, placing a tumbler on the marble wash-hand-stand or reading a newspaper would bring tears to my eyes."

It is curious that literature based upon Army experiences in convalescent care is so difficult to find, in view of Thayer's[11] pronouncement upon this subject. He, reporting in 1919 upon the medical aspects of reconstruction from his vantage point as chief medical consultant to the A. E. F., stated that apart from the fundamental question of diagnosis, the medical man was confronted by two problems: prophylaxis, and his duty to the patient during convalescence. Thayer pointed out that in wartime the value of convalescent care is put on its proper basis in the reconstruction program. He noted that convalescent camps had proved a valuable

factor, with their arrangements for work, play, rest, recreation, and amusement, and further remarked upon the importance of the psychological element in recovery. Thayer also pointed out that "war statistics in regard to the duration of convalescence have shown the need of convalescent departments in connection with large hospitals in which may be carried out every arrangement for the well-considered rehabilitation, mental and physical, of the convalescent patient."

There are doubtless numerous articles upon various phases of convalescence listed under such headings as "Irritable Heart." The writer has, however, seen but two articles from our Army experience devoted to the general subject of convalescence. The first is by Meyers,[8] who reported in 1919 upon the convalescent camp at Camp Taylor.

The second of these two articles upon the general subject of convalescence, based upon Army experience, is the important paper by Bridgman,[3] referred to in Section III of this review. Bridgman, reporting his observations at a large convalescent camp in France, gives the first exact scientific data ever published concerning the actual duration of convalescence. His article, entitled "The Duration of Normal Convalescence," which originally appeared in the *Archives of Internal Medicine*, 1919, Vol. xxiv, p. 65, is presented herewith in full, and it is to be hoped that it will be most carefully considered by all those thoughtful persons who have at heart the future of preventive medicine.

THE DURATION OF NORMAL CONVALESCENCE.*

These notes on the duration of normal convalescence are the result of work that was primarily designed for the treatment of war casualties, especially those resulting from gas inhalation. It was hoped to reduce the period of convalescence for gas cases and to avoid the relative frequency of effort syndrome so conspicuous in the British army. In reviewing the first five thousand case histories, which are to be the basis of a report on the functions of convalescent camps, a sufficient number of different cases were found to warrant deductions and suggestions as to the optimum duration of the convalescence from peace time surgical and medical affections. Many of the neurasthenias and anxiety neuroses follow operations or acute infections, where the patient is allowed to return to the wear and tear of the usual activities of life after a relatively short period. It may well be that the prolongation of convalescence, with graduated exercises, which proved so beneficial in the case of physical injuries, will minimize the exposure to psychic trauma during that period, and thereby prevent the outspoken mental symptoms which are apt to follow, especially in those individuals whose psychic resistance is below the normal. The daily life of soldiers subjects them to strain and to labor more intense than that to which civilians are commonly exposed, so that the recovery to normal demands the attainment of a higher standard than is sought in civilian practice. However, one is concerned with the recovery of what was lost by sickness, and in that sense the results are comparable with peace time conditions.

The camp in question was the convalescent section of a group of base hospitals which had a total capacity of fifteen thousand beds, the camp maintaining two thousand patients. These hospitals were about 50 miles from the front, and, in times of stress, became evacuation centers where patients stayed but a few days on their way further back. But in the main, the soldiers, especially those with complaints such as are met with in daily life, were treated and then discharged to duty, reclassified, or sent to the camp for convalescence or protracted observation.

The underlying principle of the camp was the retraining, by graduated exercises, of soldiers who were on their way back to the front lines—a training point and not a hospital. It was essential to insist on military discipline in order that the men, on their discharge, should be mentally, as well as physically, qualified for their normal duties. A suitable amount of relaxation was afforded by games, moving pictures, theatricals, etc., which filled up practically all the time not devoted to the setting-up exercises, squad drills, hikes and fatigues—the whole being under medical supervision. The food was consistently good and abundant, and the sleeping accommodations were fair—tents for the most part, well drained and with canvas floors. The work was done during the past summer and fall, so that no allowance need be made for the cold of winter. In general, the convalescence of the patients was favored by the local conditions.

On admission and discharge, a physical examination of the stripped patient was made in all instances, and promotion through the three classes, representing increasing physical demands, was dependent on the ability of the soldier to perform the work and play of the particular class without untoward symptoms. A small but satisfactory camp hospital, with access to the laboratory of the center, made possible a careful study of the individual during his stay.

The first qualification for discharge to full duty was the promotion of the patient through the two earlier and easier classes and his ability to accomplish the daily class work of Company Three—forty minutes of steady setting-up exercises, an hour of squad drill and a five-mile hike. If there were no contraindications, the patient was stripped and examined and then sent with his notes to the writer for a final check. How much better than the customary manner of feeling the pulse, palpating the wound, listening to the heart, telling the patient to be careful, and sending him from the ward to full duty! By the observation in the camp, his tolerance for exercise was known, and the patient himself knew what he could do.

A further very important point was realized at the camp. On discharge, the patient was fresh from drill and military discipline, which enabled him to rejoin his outfit and to take his normal place among his companions. He had recovered from the great loss of discipline that is bound to occur in the base hospital, and he had been led back into the normal routine of a soldier's life.

In order to confirm the results, a "follow-up" system was instituted. Letters of inquiry were sent

*Bridgman: Archives of Internal Medicine, 1919, xxiv, 65.

to the different battalion medical officers two months after the soldier had been returned to his organization. (If the war had continued, a second letter would have followed after six months, and a third after a year.) The answers to these questions as to the patient's condition were most convincing. To date, about two thousand of these letters have been returned, thanks to the co-operation and interest of the regimental surgeons, and in more than 99 per cent. of the cases, the patients discharged to Class A, who had not been killed, wounded, or gassed, were fulfilling their normal functions. And those reclassified to lower categories were doing the work of their grade.

In order that the duration of stay in camp might not be unnecessarily prolonged, all patients were seen daily, after their drill, by medical officers. Thus, men who were in good condition on entry to the camp were discharged three days after admission, the minimal time consistent with their promotion through the three classes.

To compare the duration of hospitalization of patients passing through the camp with those discharged directly to duty and not tested for their physical tolerance, a group of records was obtained from the hospital center of the period before the adoption of the convalescent camp, and before the rush of wounded and gassed necessitated rapid evacuation. These averages represent the periods which different physicians thought sufficient for recuperation. No follow-up system had been instituted for these patients, so that their final disposition is uncertain. But the writer, while working in a base hospital, has seen some of those discharged return to the hospital for relapse, weakness, painful wounds, or inability to keep up. In addition, after longer intervals, some of those previously discharged patients returned with functional mental disorders, whose precipitating trauma dated from their original entry. In the early method of handling patients, the initial stay in the hospital was sometimes proved to be insufficient, but as relapses were treated as new admissions, a false idea was obtained as to the total time lost. Transportation in France was always difficult and very slow, and any reduction in its use was well worth while.

The following tables show the average duration of stay in hospital and camps under the two systems. The first group, with the number of patients on which the average was computed, comprises those who were discharged to duty before the existence of the camp. The second group, with its larger number of cases, shows the number of days that the patients were in the hospital, plus their stay in camp. In this collection, cases complicated by secondary or intercurrent diseases are omitted.

TABLE 1.—MEDICAL CONDITIONS.

Diagnosis	Number of Cases	Average Stay in Hospital, in Days, Patients Not going to Camp	Number of Cases	Average Total Stay in Days in Hospital and Camp
Influenza	27	25	828	31
Pneumonia	24	35	170	58
Acute Bronchitis	33	24	233	36
Mumps	20	18	53	39
Measles	0	0	18	27
Scarlet Fever	8	57	7	77
Catarrhal Jaundice	1	17	7	38
Diphtheria	0	0	5	57
Tonsillitis and Sinusitis	34	19	90	34

TABLE 2.—SURGICAL CONDITIONS.

Diagnosis	Number of Cases	Average Stay in Hospital, in Days, Patients Not going to Camp	Number of Cases	Average Total Stay in Days in Hospital and Camp
Hemorrhoidectomy	21	20	25	45
Herniotomy	31	24	41	50
Hydrocelotomy	6	22	7	54
Tonsillectomy	10	20	8	37

TABLE 3.—WAR CASUALTIES.

Diagnosis	Number of Cases	Average Stay in Hospital, in Days, Patients Not going to Camp	Number of Cases	Average Total Stay in Days in Hospital and Camp
Gas	214	25	1,195	37
Enteritis	4	14	512	30
Concussion	6	25	192	45
Exhaustion	0	0	80	40

In looking over these tables, certain suggestive observations can be made. In the first place, it is important to learn that in practically every type of disease studied, the period necessary for resumption of normal function is definitely longer than was allowed at the base hospitals.

The influenza group, which included slight colds, fever of a few days' duration, or malaise of sufficient intensity to warrant the evacuation of the patient from the front line, is the only one to show approximately equal periods. The majority of these soldiers were fit for duty on their arrival at camp, where three days were necessary for the completion of their course of work, so there is an apparent ment in the two series. But attention should be called to a fact, not evident in dealing with averages, that a great many of the patients who came to the camp in the late fall, when true influenza was prevalent, were held in camp for long periods—two to four weeks—while their stay in the hospital had been only a few days. It was in this group that a great many of the effort syndrome cases were found, necessitating slow promotion. In all the other groups the figures make obvious the need for a much longer period of convalescence than was generally employed. It is interesting to learn the results in the infectious fevers. Physicians do not appreciate that the average case of mumps will not entirely have recovered until over five weeks after the onset of the disease, that the duration of the average pneumonia, including convalescence, will take over eight weeks, and scarlet fever over eleven weeks. Leaving out the possible relationship between the lack of proper care during the period of convalescence and psychic trauma, one cannot but consider the danger associated with a lowering of bodily resistance to other infections—to tuberculosis and to cardiac infections, for instance. There may be some ground for the routine questioning of patients as to the infectious fevers of childhood, especially in the presence of an unexplained cardiac lesion, a mitral stenosis accidentally discovered, or a myocarditis without determinable etiology. May it not be that the frequency of these lesions might be materially reduced by a more careful treatment during convalescence?

Consider the group of tonsillitis and sinusitis. Most patients suffering from one of these infections are out of bed and back at their daily work after a week or ten days, whereas, in the case of these young soldiers who were in the best physical condition when they contracted the disease, it appears that the normal strength is regained only five weeks after the onset of the infection. Are we not, in our daily practice, taking risks greater than we have fancied? May not the neglect of proper care during convalescence be a source for development of more serious disease?

Similar reflections arise from a consideration of the records of surgical conditions. The average herniotomy needs several weeks of care before the patient is normal again, instead of the three and a half that are commonly allowed. So often one hears that some particular surgeon can get his patients who had simple cases of appendectomy out of bed and back to work in some phenomenally short time. Is that to his credit?

In the same way, it is conspicuous that the uncomplicated tonsillectomy requires over five weeks for complete convalescence. Certainly, the majority of patients do not allow themselves so long a vacation in general practice, nor do surgeons advise so long a period.

The results obtained seem definite as to the period required for complete convalescence. And it should be emphasized that the existence of a routine of graduated exercises and military discipline favored and hastened convalescence. It was the general rule that the patients clamored to get back to their organizations where their friends, accumulated pay and mail awaited them. For these reasons and from an acquaintance with the American "doughboy" it is hard to conceive that even a subconscious desire to remain out of the fighting could have protracted their convalescence in more than a very small percentage of cases. The medical supervision was real, and both the doctors and the ward masters soon became adept in handling the occasional malingerer.

This article is presented to the attention of physicians because it is believed to be the first direct attempt to employ actual physical tests for the determination of the optimum period of convalescence, and because the periods determined seem so much longer than are generally employed.

For the purpose of placing the care of convalescence upon a sound basis of established fact rather than of casual impression, the importance of this report by Bridgman can hardly be overestimated.

Summarized, his Table 1 indicates that 147 general medical cases passing in the routine method from acute hospital to full duty status were given an average of but 28 days under medical observation. As against this, the usual method of procedure, careful observation of 1411 cases passed from hospital through his convalescent camp on the way to duty, showed that for similar medical conditions, the real or controlled time required to prepare such patients for front-line duty averaged 44 days. In other words, the patients sent direct from hospital to duty were discharged from hospital on an average of 16 days too soon, and consequently 16 days before they were actually fit for front-line duty. A similar study of the simpler surgical conditions (Table 2) indicates that routine discharge from hospital to duty came for these patients on an average of 25 days before full recovery might have been expected. Similarly, for the group of war casualties (Table 3), routine discharge from hospital is shown to have occurred on an average of 17 days before full recovery might have been expected.

Reviewing Bridgman's findings, one arrives at the following conclusions: Four hundred and thirty-nine army patients were discharged direct from hospital to duty after an average of only 24 days under medical observation. But

3471 patients passing from hospital through convalescent camp on the way to duty were proven to require an average total stay of 43 days before they could be certified as fit for full duty.

Here is an increase of 19 days over the total length of time required under the usual method of fitting soldiers for duty. It is of interest to note that this additional 19-day period, determined under accurate medical control as necessary for completing recovery, is almost identical with the average period of three weeks required for completing recovery in civil life, under such differing conditions as those existing at the old Parisian Convalescent Hospital of Vincennes, and the new Burke Foundation for Convalescents at New York.

Was it worth while to expend these additional 19 days per patient in preparing them for full duty? The answer is given in no uncertain terms by the results of the two methods of treatment. The usual and shorter hospital method does not produce an exceedingly high percentage of permanent recovery. Although no absolute figures are available, it was the general impression of medical officers with whom the writer talked in this country, as also his own impression, that between 10 and 20 per cent. of the men discharged direct from army hospital to duty, returned to hospital within a relatively short length of time; in other words, the work of the hospital had not been completed and the patients being only half cured, did not continue in good health.

Bridgman was able to follow 2000 of his patients after their discharge to duty on the completion of training at his convalescent camp. The letters received concerning the status of these patients, through the coöperation and interest of regimental surgeons, prove beyond a shadow of doubt that in more than 99 per cent. of all Bridgman's cases, his patients discharged to Class A, who had not been killed, wounded or gassed, were fulfilling their normal functions two months after being returned to full duty status; those reclassified to lower categories continued to do effectively the work of their grades.

Such a high percentage of lasting good results of treatment, obtained in spite of the strains imposed by full-duty status on a modern battle front, are remarkable. They are justification enough, were any needed, for asserting and asserting again until something gets done about it, that by the use of similar methods equally good results may anywhere and always be obtained with our civil hospital patients, who upon their discharge must carry on again in our perpetual warfare with disease.

In a word, the community has not done for the sick worker all that in the light of available knowledge he has a right to expect and demand of it, until there has been added to the average of three weeks of care in an acute hospital, an additional average of three weeks of skilled care in a modern convalescent home, where proof can be obtained of fitness to perform work before a patient is discharged from medical supervision.

REFERENCES.

1 Asquith: An Autobiography, Doran, N. Y., 1920, ii, 253.
2 Bott: Canad. Jour. Ment. Hyg., 1920, i, 302.
3 Bridgman: Arch. Int. Med., 1919, xxiv, 65.
4 Brush: Med. Rec., New York, 1917, xci, 768.
5 Bryant: Am. Jour. Electrotherap. and Radiol., 1920, xxxviii, 85.
6 Hexter: Mod. Med., 1919, i, 532.
7 Mann: Arch. Int. Med., 1918, xxi, 682.
8 Meyers: Mil. Surgeon, 1918, xliii, 497.
9 Powell: Mod. Hosp., 1919, xii, 324.
10 Sturgis: Jour. Nat. Inst. Soc. Sci., Jan., 1917.
11 Thayer: Tr. Congr. Am. Phys. and Surg., 1919, xi, 66.

THE WASSERMANN TEST.

II. Notes upon Children of Women with Positive Wassermann Tests.*

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[From the Evans Memorial, Boston.]

In no field of medicine is the diagnosis of syphilis more important than in obstetrics, yet nowhere is the Wassermann test, when performed with cholesterolized antigens, more unreliable or confusing. It is evident that several years must elapse before sufficient data can be collected to permit reliable conclusions upon this subject. In the meantime, how shall we regard the woman with no evidence of syphilis except a positive Wassermann test during pregnancy; and with this single symptom what is the prognosis as regards the child? The preliminary observations here recorded throw some light upon these important questions.

In approximately 5000 routine maternity cases between 1917 and 1920 at the Robinson Memorial, Massachusetts Homœopathic Hospital, Boston, 461 (9.2 per cent.) showed a positive Wassermann test, of which 391 (7.8 per cent.) gave a reaction strong enough to insure a definite laboratory report, and 231 (4.6 per cent.) were strongly positive. The technique of the test which was performed with cholesterolized antigens, and the social status of the patients are described in a previous paper.[1]

The effect upon the children may be shown by comparing the positive Wassermann cases with a similarly collected negative series of the same nationalities. The subject may be considered from two standpoints: the effect upon previous children, and upon the child of the present

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pregnancy, although in the latter case our statistics at present are incomplete. For comparative purposes, the positive mothers may be separated into two groups: (1) those clinically suspicious of syphilis, and (2) those with no clinical evidence of the disease.

Serological vs. Clinical Syphilis.—In order to make clear our statistics, certain differences between clinical and serological syphilis, as indicated by the positive Wassermann test, should be pointed out. For this purpose the following classification based upon the clinical findings as represented by physical examination, symptoms and history has been made: (A) *definite,* when there is no question of the clinical diagnosis; (B) *suspicious,* when several symptoms or indications are present, but the evidence is not conclusive; (C) *suggestive,* when a single symptom of the disease is found, and (D) no indication, when no evidence of any kind can be obtained. In order to avoid misleading conclusions in regard to children of the clinical and non-clinical groups, all previous fœtal deaths, and symptoms in the present child have been disregarded, thus materially reducing the number of clinical cases.

TABLE NO. 1

Clinical Classification

Clinical Syphilis	Negative	Reportable Positives 2 to 4-plus	Strong Positives 4-plus
Number of cases	500	391	231
A. Definite	0.2%	5.6%	9.1%
B. Suspicious	0.4	2.8	3.4
C. Suggestive	1.0	7.4	9.1
D. No indication	98.4	84.2	78.4

In routine obstetrical or medical examinations it is a generally accepted fact that clinical syphilis in women is difficult to detect. According to the interpretation of different authorities as to what constitutes a clinical diagnosis, the per cent. of pregnant women with positive Wassermann tests who show clinical syphilis has been variously estimated. The average of 40 per cent. for ten observers is somewhat higher than the 15.8 per cent. here recorded, which is unusually low owing to the inadmissibility of considerable clinical evidence.

The strength of the reaction is an appreciable factor, since 21.6 per cent. of the strongly positive show signs of clinical syphilis as compared with 15.8 per cent. for all positives. Such a result should be expected since clinical syphilis ordinarily gives a stronger reaction than hidden, and more non-syphilitics probably have been included among the weakly positive reactions.

The presence of 1.6 per cent. of clinical syphilis in the negative series agrees with the often repeated statement that a negative test does not rule out syphilis. If, according to the average estimate of four European investigators, approximately one-fourth of all syphilitic pregnant women give negative Wassermann tests, and if we assume that 8 per cent. of adult women may have contracted syphilis, about 2 per cent. of negative Wassermann women should prove syphilitic. In our restricted classification, even including all suspicious and suggestive symptoms, 1.6 per cent. is obtained, of which only 0.2 per cent. is conclusively syphilitic. This discrepancy is the result of inability to detect syphilis by routine examinations when its presence is unsuspected, and of absence of clinical symptoms in women.

Serological syphilis as indicated by the presence of a positive Wassermann test is not synonymous with clinical syphilis in pregnant women, since each occurs independently of the other. This is particularly true in statistics compiled with a cholesterolized antigen in which, owing to certain changes in the blood, approximately 25 to 30 per cent. of non-syphilitic cases may be included.

In order to determine the effect upon the children, 391 positive women, of whom 62 showed clinical signs of syphilis irrespective of findings in the children, and 329 had no symptoms, are compared with 492 negative cases with no clinical symptoms. Of the 62 clinical cases, 50 showed a strong positive and 12 a moderate positive reaction.

PREVIOUS CHILDREN.

A record of the previous children was obtained in the examination of the multiparae. Since some children wree born before syphilis was contracted and since, for reasons previously stated, certain non-syphilitics may have been included in the positive series, and a corresponding number of syphilitics in the negative, a comparison between the two groups will furnish only minimum figures as to the effect of syphilis upon the children. However, the clinical positives more closely approximate the maximum effect.

TABLE NO. 2

Previous Children

	Negative	Reportable Positives (2 to 4-plus)		Strong Positives 4-plus	
	Non-Clinical	Clinical	Non-Clinical	Clinical	Non-Clinical
Number of multiparæ	275	44	197	35	109
Number of conceptions	606	104	458	81	244
Per cent. fœtal deaths	19.6	32.7	26.0	35.8	29.9
Per cent. dead children	10.9	15.4	14.8	16.0	16.0
Per cent. living children	69.5	51.9	59.2	48.2	54.1

Fœtal Deaths.—The term "fœtal death" includes both abortions and still-births. Arbi-

trarily, the birth of a child which has not reached the stage of viability at the 27th to 28th week is here termed an abortion, and one that has reached this stage, but in which cardiac action has ceased during or before birth, is classed as a still-birth.

A definite relationship which has long been recognized by syphilologists and obstetricians exists between syphilis and fœtal deaths. In this respect Table No. 2 presents an interesting comparison between the negative and the positive series. If 19.6 per cent. represents the normal incidence of fœtal deaths in non-syphilitics, syphilitics with clinical symptoms show a decided increase: 32.7 per cent. or approximately 1.67 times as frequent; whereas the non-clinical have a smaller increase: 26.0 per cent. or 1.3 times. In spite of the absence of clinical symptoms, hidden syphilis evidently manifests itself by an appreciable though less decided increase in the per cent. of fœtal deaths. This difference between clinical and non-clinical may be explained by the more pronounced effect of the former upon the offspring, by the possibility that in old cases the disease may have run its course, and by the inclusion of a goodly percentage of non-syphilitics in the non-clinical group. If we disregard the first two possibilities, the figures indicate that of 197 non-clinical cases, 100 were syphilitic and 97 non-syphilitic, or about 40 per cent. of the 241 multiparæ in our entire positive series were non-syphilitic, a somewhat higher figure than our previous estimate of 25 to 30 per cent. which was based on a comparative study of antigens. Presumably the latter is more exact, since the 40 per cent. represents maximum findings.

The per cent. of fœtal deaths increases with the strength of the reaction in both the clinical and non-clinical cases. Since a strong reaction is more apt to denote active syphilis, and since the women are comparatively young, 26.5 years, with an average of only 2.3 pregnancies, it is reasonable to believe that the 35.8 per cent. of fœtal deaths in the strongly positive clinical cases, nearly twice the number occurring in non-syphilitics, represents the maximum effect of syphilis.

The additional fœtal deaths are not all directly due to syphilis. Undoubtedly a large number are the result of its indirect action upon a susceptible host, as demonstrated in Table No. 3, which also shows the influence of race. The Russian Jew, the American of the second generation, and the Negro vary in respect to the frequency of non-syphilitic fœtal deaths, the Negro being the most and the Jew the least susceptible. Syphilis does not increase this tendency by a constant figure, but according to the relative susceptibility of the race, which indicates that its indirect action upon a receptive soil is also an important factor.

TABLE NO. 3

Effect of Race Upon Foetal Deaths

Wassermann	Per Cent. Foetal Deaths		
	Russian Jew	American	Negro
Negative	15.2	21.4	25.8
Positive	24.5	32.1	41.9
Strg. Positive	30.0	36.0	45.8

LIVING CHILDREN.

Records upon the children born alive are complete only in respect to the number dying during the first few years. No information has been obtained as to the condition of the survivors.

TABLE NO. 4

Living Children

	Negative	Reportable Positives (2 to 4-plus)		Strong Positives 4-plus	
	Non-Clinical	Clinical	Non-Clinical	Clinical	Non-Clinical
Number multiparæ	275	44	197	35	109
Average conceptions	2.20	2.37	2.32	2.32	2.24
Average living children	1.53	1.23	1.38	1.11	1.21
Total children born alive	487	70	339	52	171
Per cent. living	86.5	77.1	80.0	75.0	77.2
Per cent. dead	13.5	22.9	20.0	25.0	22.8

Provided a woman is fertile, syphilis has no apparent influence upon the reproductive power, since the average number of conceptions in this series is higher for the positive than for the negative. However, the productive power, as measured in terms of living children, is greater for the negative than for either the clinical or non-clinical positive. This fact may be better expressed by the per cent. of children dying after birth, the positive series showing a gain over the negative of 9.4 and 6.5 per cent. for the clinical and non-clinical respectively, and a still further increase of 11.5 and 9.3 per cent. for the clinical and non-clinical strong positives, which again indicates the greater effect on the child of clinical syphilis, and a strongly positive reaction in the mother. The end-result, as expressed by the per cent. of living children to the total conceptions in Table No. 2, also illustrates the more marked effect of clinical syphilis and the strongly positive Wassermann, the per cent. falling from 69.5 for the negative to 51.9 for the clinical positive and 48.2 for the clinical strong positive.

The effect of race may be shown again in Table No. 5, which illustrates the exceptional

TABLE NO. 5

Effect of Race Upon Survival of Children Born Alive

Wassermann	Per Cent. of Living Children		
	Russian Jew	American	Negro
Negative	71.4	68.4	57.0
Positive	66.3	56.4	27.9
Strong Positive	66.7	54.0	20.8

productive capacity of the Jew and the poor showing of the Negro, as well as the slight effect of syphilis upon the former and its destructive course in the latter.

PRESENT CHILD.

The results of 374 pregnancies in women with positive Wassermann tests during pregnancy may be shown by the number of fœtal and early deaths and by the condition of the living children. In this study all cases receiving any appreciable ante-partum treatment have been eliminated. Since it has been impossible to obtain a complete follow-up in all cases and only part of the children have been examined clinically, it is necessary to divide the subject into two parts: (1) observations at the time of leaving the hospital and (2) records from 1 to 4 years after birth. The comparison with the negative Wassermann series is applicable only to the first part, since no attempt has been made to follow negative cases after leaving the hospital.

On Leaving Hospital.—The first part of Table No. 6 represents the ten to fourteen days the child remained in the hospital, although with sick or weak children this period was longer. The figures have been classified only from the standpoint of fœtal deaths, dead children and living children, since few of the living children at this early period presented sufficiently definite characteristics of the disease to differentiate it from the variety of skin lesions and snuffles which occurred with equal frequency in the negative series.

TABLE NO. 6

Present Child

	Negative	Reportable Positives (2 to 4-plus)		Strong Positives 4-plus	
	Non-Clinical	Clinical	Non-Clinical	Clinical	Non-Clinical
Total Children	492	54	320	42	173
Dead Children per cent.					
Fœtal Deaths	3.7	7.4	6.6	9.5	8.1
Dying in hospital	2.6	3.7	2.8	4.7	2.3
Dying after hospital	—	8.6	6.5	11.2	7.8
Total	—	19.7	15.9	25.4	18.2
Living Children per cent.					
Syphilitic	—	11.5	4.9	11.2	4.6
Poor Health	—	2.9	2.4	0.0	3.1
Fair Health	—	5.7	4.9	0.0	1.5
Good Health	—	60.2	71.9	63.4	72.6
Total	—	80.3	84.1	74.6	81.8

Fœtal deaths in hospitals are limited chiefly to still-births and an occasional abortion, and for this reason do not represent the full effect of syphilis over the entire gestation period. The similarity between the causes of death in the negative and positive series suggests that the increase due to syphilis is largely an indirect effect. Williams[2] considers that syphilis causes between 26.4 and 34.4 per cent. of fœtal deaths, including in this classification all deaths within the first ten days of life. Similarly, our figures indicate an increase due to syphilis of 33 and 43 per cent. for the non-clinical and clinical positive cases respectively. As with previous fœtal deaths the clinical surpasses the non-clinical, and the strong positive leads the positive, again emphasizing the importance of the clinical findings and the strength of the reaction in determining the probability of producing a healthy living child, and at the same time cautioning against disregarding the evidence of an unsupported positive Wassermann. The per cent. of living children varies inversely with the per cent. of fœtal and early deaths, the strongly positive reaction and clinical syphilis yielding the lowest figures.

One to Four Years.—By correspondence, social-service, and out-patient work many cases were traced after leaving the hospital. The second part of Table No. 6 gives the results with these children from one to four years after leaving the hospital, calculated upon a percentage basis for the entire number. These figures, which do not represent the entire number, and include less than one hundred careful clinical examinations, should be considered only as preliminary statistics.

The high per cent. of apparently healthy living children, 60.2 for clinical and 71.9 for the non-clinical mothers without treatment, is a most hopeful sign, indicating that at least 60 per cent. of children from syphilitic mothers show no signs of congenital syphilis during the first years of life, a conclusion which in view of the character of our cases applies only to old or inactive and not to florid syphilis.

SUMMARY.

1. In routine obstetrical examinations comparatively few women with positive Wassermann tests show clinical signs of syphilis.

2. Syphilis is an appreciable factor in the causation of fœtal deaths, directly or indirectly producing from 30 to 40 per cent.

3. Syphilis has a similar effect upon the mortality of children during the first years of life.

4. The offspring are more seriously affected when syphilis in the mother is clinically evident. and when the reaction is a strong rather than a weak positive.

5. A positive Wassermann test in the absence of clinical findings, especially if repeatedly positive, should not be disregarded.

6. With cholesterolized antigens, positive reactions in pregnant women may be obtained in non-syphilitics.

7. Untreated mothers with histories of clinical syphilis and positive Wassermann tests may produce as high as 60 per cent. of children

apparently healthy during the first four years of life.

BIBLIOGRAPHY.

1 Belding and Adams: Boston Med. and Surg. Jour., 1922, 187, 815.
2 Williams, J. W.: Jour. Am. Med. Assn., 1915, 64, 95, and Bull. Johns Hopkins Hosp., 1920, 31, 141.

SOME PATHOLOGICAL NOSE AND THROAT CONDITIONS OF INTEREST TO BOTH DENTISTS AND RHINO-PHARYNGOLOGISTS.*

BY OLIVER A. LOTHROP, M.D., BOSTON.

The general advance of Medical Sciences, and especially the discovery of focal infections with their frequent and varied manifestations, have done much to bring the dental and rhinopharyngological specialists into an inter-related field of study. Great care, however, must be exercised that over-enthusiasm does not play too important a part, or that one specialist does not claim too much for his own branch. In a given case all symptoms and signs should be thoroughly studied and the data be carefully considered in relation to all parts of the body.

Let us begin with adenoid hypertrophies for they are the earliest factors in the life of an individual to produce pathological sequences. Adenoids are composed of lymphoid tissue and the child is born with them. Their function is to destroy invading bacteria and therefore act as an initial defence to the body. As a result of repeated infections, hypertrophy supervenes and they then become obstructive to nasal breathing and may become chronically diseased. In such a state they may cause post-nasal catarrh, and interfere with proper function of the Eustachian tubes, which may lead to loss of hearing or inflammatory conditions of the middle ear or a focal infection.

As proof that the adenoids alone may be a focus for arthritis, the following case is cited:—A man, aged 50 years, had his tonsils, but not his adenoids, removed five years ago. For four years after his operation he was troubled with arthritis, but not before. The tonsils had been cleanly removed. Removal of a moderate sized adenoid gave him immediate relief which has lasted now for over a year.

The chronic mouth breathing caused by hypertrophied adenoids more closely concerns the students of orthodontia. In the growing child with a more or less constant open mouth the teeth of the upper jaw are deprived of the inside pressure of the tongue, and the lip and cheeks exert a misplaced pressure on the sides of the alveolus. This produces in time a narrowed and elevated arch, a crowding of the teeth, and pushing forward of the incisors. This same elevating of the palate encroaches on the vertical space in the nares allotted to the septum. The result is a buckling of the septum, or if the nasal bones are still pliant an aquiline deformity of the nose is produced. The view held by some dentists that the dental deformity and open mouth cause the adenoids seems untenable.

Whenever adenoids are present and causing trouble they should be surgically removed. The operation may have to be repeated because regrowth is frequent in the young.

Tonsils, much like adenoids, are composed of lymphoid tissue and are subject to hypertrophies and diseases. The repeated acute attacks lead to subacute and chronic conditions, and from any of these may develop infected cervical glands, arthritis, neuritis, endocarditis, pyelitis and other systemic complications. There is little doubt but that infected tonsils head the list in causing systemic infections, while pathological conditions from the teeth and infections of the nasal sinuses follow next in order.

Unfortunately, it is at present impossible to tell before operation whether in a given case a tonsil is the etiological factor. Some of the most brilliant results have come from removing very small tonsils, small pieces of tonsils left from a previous operation and tonsils which have never given the owner any throat symptoms. On the other hand, cases exhibiting large, red and oedematous tonsils, and frequently causing sore throats, never have constitutional involvements.

The dentist, too, has seen many mouths with multiple apical abscesses as shown in the x-rays, and the patients enjoying the best of health.

The tonsils also are subject to special pathological conditions. The commonest is the peritonsillar abscess. It is characterized by the formation of pus external to the capsule, and generally near the superior pole. The pus forces the tonsil inward and the palate swells forward and inward. The median raphe is pushed toward the opposite side and muscular spasm interferes with opening of the mouth. A slender knife passed into the supra-tonsillar fossa and then through the capsule will generally enter the pocket and evacuate the pus. Incisions in the palate pass through muscles and these openings frequently close, causing a reaccumulation of pus. Subsequently attacks are to be expected so that tonsillectomy is recommended. This is a certain cure if every vestige of the capsule and old scar is removed.

Vincent's angina is not an uncommon affliction and the characteristic Spirilli and Fusiform Bacilli cause a superficial ulcer. This may be touched with tincture of iodine and the patient given a potassium chlorate mouth wash and gargle.

Syphilis, diphtheria, the exanthemata and other constitutional infections involve the tonsils.

*Read December 14, 1922, before the Harriet Newell Lowell Society for Dental Research at the Forsyth Dental Infirmary.

The tonsils being so intimately connected with the lymphatic system, it is quite probable that they gather up septic matter from pyorrhoeic mouths, and the discharges from sinus infections, etc., and carry it into the blood stream, causing constitutional infections.

Of the lingual tonsil, we hear very little. It is made up of many follicles and covers a large area on the back part of the tongue. It becomes more prominent in adult life after subsidence of the other lymphoid tissue. How much it figures in constitutional infections is yet to be determined.

At this point, the recalling of a few unusual cases of focal infection might be of interest and instructive.

The first case concerns a woman who complained of chilly sensations, fatigue, aches, pains, nervousness, and in fact there were so many complaints, and she acted so nervously, that a diagnosis of neurasthenia seemed probable. She was referred to her dentist and he removed teeth with apical abscesses. A few months later she reported back and had gained much weight and was the picture of health. All of her long list of ailments had disappeared, and her nerves were in absolute composure.

A second case relates to a man of nearly 60 years who had been very hard of hearing for about 40 years; at times absolutely stone deaf in both ears. Although he had consulted many specialists and had much treatment, two infected antra had gone unnoticed until his last attack. Free intra-nasal drainage and irrigation cleaned up the antra in a few weeks. From hearing nothing and suffering from thundering tinnitus the return of good hearing began at once, and now for several years he has had no return of the deafness that had persisted for 40 years.

A similar case in a woman, of 23 years' standing, could also be cited, but otherwise these cases are rather unique.

A third case invades the field of dermatology. This patient, 55 years of age, had had a very severe manifestation of a skin eruption on the face and hands. The skin was swollen, red, weeping and itched. It was much aggravated by the eating of shell fish, lobsters, strawberries, etc. He had never had sore throats and the tonsils were not unusual.

Within 24 hours after the removal of his tonsils, his skin was all cleared up and has remained so now for over a year. Lobsters can now be eaten with impunity.

The loss of vision in one or both eyes presents a not unusual phenomenon. Case four then recalls a woman who had been blind in her left eye continuously for a year. A frontal sinus operation at the end of that time evacuating much pus restored her vision within 24 hours. Two cases could be cited of loss of vision for a period of 2 weeks restored after tonsillectomy and drainage of an antrum respectively. Numbness of the cheek was also present in the tonsil case.

The fifth case shows an intermittent mild interference of conductivity of impulses in the recurrent laryngeal nerve. This patient was a woman in middle life who for some ten minutes at a time would lose her voice or it would go into falsetto. This condition had persisted for 2 to 3 years. She also had arthritis. Removal of her tonsils cleared up this unusual case of temporary aphonia at once and also the arthritis.

The sixth case also is unique. A young woman complained of uncontrollable weeping in the left eye alone. Her ophthalmologist reported the lachrymal ducts patent and pigment passed freely from the eye into the nose. It evidently was a case of over-secretion. Removal of small tonsil stumps, remaining after a previous operation, relieved this condition for two months, but was followed by a slight recurrence. An infection then discovered in the right ethmoidal sinuses probably explains the recurrence. This over-secretion must have been due to interference with the inhibitory fibres to the lachrymal gland or the direct action of toxines.

The seventh case represents a not unusual condition. A man of 21 years has for one year been having hyperacidity and symptoms of a gastric ulcer. An abdominal x-ray revealed a typical condition. A tonsillectomy was performed and although the ether sickness was marked, he made a rapid convalescence and has since been entirely relieved of his gastric symptoms.

The eighth case presents what has hitherto been considered an incurable type of malady. The use of bromides has been the physicians' main reliance. This young woman of 22 years of age has for over a year been having at night frequent epileptic convulsions, and during the daytime frequent attacks of a petit mal type. Although she had had a tonsil and adenoid operation done six years ago, moderate sized tonsils were removed three months ago. There was practically no adenoid. Since the operation the patient has had no attack of petit mal, and only one night convulsion of true epilepsy. Her general health is much better.

There is such an abundance of cases of focal infection from different sources causing all degrees and types of arthritis and neuritis, that citing individual cases would be of no additional information or of interest to you.

Let us speak next of the large and difficult subject of sinusitis. By far the greatest proportion of cases arise from infection by extension from nasal inflammations. These nasal inflammations are generally the result of common colds, influenzas and contagious diseases. Syphilis, atrophic rhinitis and traumatisms are etiological factors. Infection of the antrum has in the past been commonly caused by extension

from some dental pathology in the upper alveolus, but that cause has been much diminished in late years. The reason seems to be that the frequent dental x-rays of teeth disclose the apical abscess before it has had time to ulcerate into the antrum.

In addition to the different etiological factors, we have to contend with a variable anatomy, a fluctuating resistance on the part of the patient, and infections of unequal duration and intensity. These factors all mean several different pathological results.

The antrum is the most frequently infected sinus and the frontal sinus and ethmoids much less often. Pain is an infrequent symptom in antrum infection and is present only when there is pressure from a full antrum, a closed osteum, or the infection is very acute and extends to the deeper tissues. The more prevalent symptoms are the persistence of a cold, catarrh and often a headache. Detection of an odor by the patient appears in later stages.

Frontal sinus infection, on the other hand, almost invariably has diurnal pain and headaches. The chronic cases with free drainage may have no symptoms except the catarrh. The fact that the frontal sinus pain is diurnal is a valuable sign in differentiating from a neuritis and neuralgias which are common in that region.

The pathology varies from only a congestion and infection of the mucous membrane to that of oedema and subsequent formation of polyps. In other types there may be partial to complete destruction of the cilia and the replacement of the mucous membrane by granulations.

The discharges may vary in amount, and from a thin glairy mucus to a foul dirty pus. The muco-purulent discharges seem less amenable to treatment than the more purulent types.

Most cases respond to a simple operation by giving drainage and ventilation with subsequent irrigation. In those cases where the mucous membrane has become so badly diseased that it cannot repair itself by the above proceedings a more radical operation will be required whereby the diseased mucous membrane is all carefully removed, it being replaced later by a regenerated non-functioning epithelium. It is interesting to note during the convalescence of an antrum, subsequent to a large opening being made under the lower turbinate, that the residual drainage is carried by the cilia out through the normal osteum and not as would be supposed through the lower drainage opening.

In cases of dental infection, and there has been no permanent injury to the mucous membrane, extraction of the tooth and removal of carious bone will be sufficient. Should it be found that this procedure is not successful, intra-nasal drainage should be established, but no fistula should be made through the alveolus. Should curettage be later required, this should be performed through the canine fossa.

It is interesting to note in cases of sinusitis where systemic infections result, that treatment of the sinuses does not give the quick and complete relief experienced after tonsillectomy. This may be explained by the fact that sinus infection is never so radically removed.

Many patients consult both the dentist and throat specialist for a bad breath or detection of bad odors or taste in the mouth. The reasons are obvious in many cases. The dentist will find unclean teeth or the decomposition of matter caught between the teeth. Caries, pyorrhoea, and tobacco are all factors. Rubber dental plates produce a characteristic odor.

Any wound or septic condition anywhere in the body will produce an odor more noticed by others than the patient. The detritus ejected from the tonsil crypts is invariably foul and similar matter may come from the adenoid. A foreign body a long time in the nose becomes foul, and the crusts from an atrophic rhinitis become very fetid. Fortunately for the patient in cases of ozena there is also atrophy of the olfactory nerve and they are spared the disagreeable odor. Pus in an antrum often becomes foul, especially that of dental origin. This odor is more often detected by the patient than by those near him. Syphilitic lesions producing dead bone have a characteristic odor.

Constitutional diseases like nephritis and diabetes produce special odors of the breath. Lung abscesses are generally foul. Even after mentioning this long list there still remain many unexplained odors to the breath.

This paper should not be concluded without some remarks concerning referred pains, which about the head are frequent. It has been known for years that any irritation in the course of a sensory nerve may cause the patient to feel the result of the irritation in any part of the course of that nerve or its branches. About the head there is a more complex arrangement of the nerves, and also there are more anastomosing branches forming the so-called plexus. Ganglia, too, are more numerous and they are a means of transmitting sensations from one nerve to another. It is, therefore, much harder for a patient to localize the source of the pain.

The aurist encounters probably the greatest number of these. Pain is referred to the ear by impacted 3rd molars, caries in a tooth, or an apical abscess especially if situated on the lower jaw. A referred pain may result from an uneven bite brought about by faulty bridge work, extraction of molars, and habit of masticating only on one side. The pain in these cases is sometimes the result of strain to the temporo-mandibular articulation.

Passing to pathological conditions in the throat causing referred pain, may be mentioned peri-tonsiliar abscesses, post-tonsillectomy wounds, and acute pharyngitis. An acute antrum may cause a pain to be referred to either the ear or the teeth.

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THE ELECTROCARDIOGRAPH.

OF the various instruments of precision used in medicine there is none that seems so delicate and so accurate as the electrocardiograph. It seems almost unbelievable that within our bodies electric currents are being set up by muscular activity that will have strength enough to be passed over wire and affect an instrument situated more than a hundred yards away. It seems even more remarkable that an instrument can pick out to the exclusion of other currents the ones set up by the heart's contraction, and that a record of the deflections of a wire produced by such a current can be photographed and the picture studied in such a way as to give information in regard to the heart which cannot be obtained by inspection, percussion or auscultation. Such, however, is the accomplishment of the electrocardiograph.

Although the electrocardiograph has made it much easier to determine with accuracy the type of abnormal cardiac rate or rhythm with which one is confronted it must be emphasized that the pioneer work in this field of the study of the mechanism of the heart beat and the various abnormalities was done by individuals who only had the polygraph with which to work. That so much was accomplished by the pioneers in this field of work aided only by the tricky polygraph shows the rare ability of those workers.

The electrocardiograph has made it possible, however, to understand the mechanism of the abnormal rates and rhythms of the heart in considerable more detail than formerly. It also gives us information in regard to the size of the various parts of the heart and hints to us in regard to the condition of the auricular and ventricular muscle. It furnishes very accurate information in regard to that part of the heart over which travel the impulses which produce the muscular contractions, namely, the His bundles. It helps in determining the action of drugs such as digitalis upon the heart. In the electrocardiograph lies the expectancy of continued advance in our knowledge of the physiology of the heart in health and under abnormal conditions.

In addition to the assistance that this instrument gives in forming an opinion of what is going on in the heart it is of great help in directing the treatment of cardiac disease, for the action of digitalis upon the heart is very much more effective in some types of cardiac disease than in others. Although the type of cardiac disease can usually be detected in experienced hands without the use of the electrocardiograph, in doubtful cases this instrument confirms the diagnosis and thus guides in the treatment. Also by a study of the records early evidence of toxic symptoms from digitalis may be detected.

BOSTON LYING-IN HOSPITAL.

THE Trustees of this hospital have distributed the condensed annual report for the year ending 1922, this being the ninetieth year of this institution.

There were 929 patients admitted. Of this number about one-eighth were free cases and the rest paid about one-half of the cost. Eight hundred and thirty-eight babies were born. In the Out-Patient Department 7741 visits to prenatal clinics were made by patients and 1464 patients were attended at confinement in their homes.

A résumé of the work done during the past 50 years is as follows:

LAST FIFTY YEARS.

30,000	Patients treated in confinement in hospital.
28,925	Babies born or cared for in hospital.
55,088	Patients attended in homes.
54,683	Babies born or cared for in homes.
998	Nurses granted our diploma.
299	House officers granted our diploma.
5,512	Medical students given special training.

Although the expense of maintenance far exceeds the income, the Trustees express the hope

that contributions will be forthcoming so that the hospital can not only continue to function but will meet the growing demands for greater service.

The announcement of the retirement of Dr. W. L. Richardson from active service is presented with expressions of appreciation of the great service contributed by him.

Cash donations for current expenses amounted to $18,705.48, and for the new building contributions to the amount of $121,399.21 were received. The following copy of a circular was enclosed with the report:

BOSTON LYING-IN HOSPITAL.
221 Longwood Avenue.

Boston, April, 1923.

At last our new hospital, so long and so badly needed by the city, is open. With the exception of the private ward, it is now completed and in operation. It gives opportunity for increased work; and, both from charitable and scientific standpoint, for more effective work.

For names of Trustees, of Lady Visitors, of Staff, for summary of work done in 1922, etc., etc., reference is made to the Condensed Report enclosed herewith.

Of our patients 94 per cent. were married women, poor, but hard-working, self-respecting people and most grateful for the care given to them, which is not excelled anywhere, and as good, as regards medical care, as the wealthiest can obtain in their own homes.

The hospital has never received any aid from the Commonwealth, or from the City, and the services of all connected with it (except those engaged in the hospital permanently) are given without remuneration in any way. There are no outside office expenses, excepting for a little clerical work. The patients contribute all in their power, and many in after years send in from time to time small sums with the nicest of letters expressing their great appreciation of all that was done for them. But all the good work accomplished by the hospital could not have been carried on except for the kind help of its many friends, to whom the Trustees are deeply grateful for their valuable assistance.

That a larger and better plant was much needed by the growing city is already shown, although the new hospital has been open only three months, by the increased work coming to it. It is to be expected that the work will still further grow, which means that the expense of maintaining this charity, so necessary, so useful and one that should appeal to all, is to be much greater. The need of more and larger contributions is very urgent.

Your continued, and increased, help is most earnestly requested. Contributions may be sent to James R. Hooper, Treasurer, 87 Milk Street, Boston, Mass.

BOARD OF TRUSTEES,
Boston Lying-In Hospital.

1923.

To James R. Hooper, Treasurer.

Please find enclosed $..... as a contribution toward the current expenses of the BOSTON LYING-IN HOSPITAL.

.....

No. .....Street,

.....Mass.

It would be well for physicians to use all proper influence toward inducing charitably disposed persons to make contributions and to provide for legacies in wills.

This institution has been an important factor in medical education as well as a great charity.

BOSTON MEDICAL HISTORY CLUB.

AT the Annual Meeting, held at the Boston Medical Library on April 16, the following were elected officers for 1923-24: President, John W. Farlow, M.D.; Vice-President, Malcolm Storer, M.D.; Secretary-Treasurer, John W. Cummin, M.D.; Curator, James F. Ballard; Council, Prof. F. C. Lewis and Joseph W. Courtney, M.D.

Dr. Timothy Leary read a paper on "Benj. Church, Jr., Director General of the Hospital (First Surgeon General) of the American Army. Traitor or Arbitrator? A presentation of his (manuscript) medical note-books with a discussion of his culpability." He sketched Church's family history, college life at Harvard, and medical study; his active and brilliant political career, his high office in the American Army, his arrest and imprisonment for treason, and his tragic death in 1778. He also read Church's letter of military information upon which the charge of treason was based, and finds it so filled with exaggerations of the military strength of the Colonies that he believes that Church's idea in writing it was not to betray his country but to try to convince the British authorities that the Colonies were invincible and thus to persuade them to end the war. In other words, he thinks that Church was a victim of injustice; no traitor, but a would-be arbitrator.

In connection with his paper Dr. Leary showed many interesting colonial documents in original and photostat reproduction, also Church's medical note-books in manuscript, filled with lists of drugs and notes on lectures taken when he was studying in London.

After the meeting the members inspected the medical portraits, some 300 in number, collected by the late Dr. Ernest B. Young and recently given to the Medical Library in his name by his family. It is an interesting fact that almost all these prints were originally picked up about Boston.

The next meeting of the Club will be held in November.

PUBLICITY IN MEDICAL MATTERS.

SIGNIFICANT of the trend of the times were three votes passed at the annual meeting of the Suffolk District Medical Society.

On motion of Dr. Place it was decided that the Society should continue to hold public meetings similar to that held last November in Ford

Hall at which "Animal Experimentation" was discussed.

On the initiative of Dr. G. C. Shattuck and his associates of the Committee on Public Health provision will be made through a special committee for providing speakers and planning meetings upon public health matters for such societies and organizations as may seek assistance in this matter.

The meeting, on motion of Dr. Otis, further instructed the officers of the Society to invite to such meetings as in their judgment seemed wise the representatives of the press.

These measures will all tend to extend to the public a knowledge of the fundamental facts of medicine. That there is nothing original in these plans is abundantly proved by the publicity given to the teachings of the various cults. It is obvious that there are many technical subjects which are of no concern to the general public and that there are many matters concerning the advances in medicine which are too unsettled for discussion in public meetings. But it is equally true that an educated public is no longer ready to accept medical teaching as a matter of authority. If reason is to be substituted for authority the medical profession must in the widest possible manner offer to the public a knowledge of the principles and established facts of medical science. In this way—and it is safe to say that in this way alone—can the vagaries of the cults be successfully combated.

The movement for popular education is very widespread and takes many forms, but none can be more effective in results than wise action, coöperation and leadership on the part of the various district societies in spreading knowledge upon matters of health and the conquest of disease.

A GET-TOGETHER BANQUET.

THE *Illinois Medical Journal* reports a method of uniting physicians, dentists, pharmacists and legislators in an effort to enact suitable laws relating to medicine and public health. The scheme consists of a banquet arranged by the professional men to which legislators are invited and the suggestion offered to have similar meetings arranged throughout the state; the professional men to explain the advisability of proposed legislations and give the legislators opportunity for questions and discussion. This plan seems to open the way for an approach which, if not misconstrued, might accomplish much good. Whether the plan would accomplish all that is desired depends on the reactions of the legislators.

Opponents would construe the purpose to be an adroit substitute for a lobby and would base arguments on that supposition. We assume that our friends in Illinois know the temper of their representatives. Here in the East, if one may draw conclusions from past experiences, the likelihood of securing the attention of very many of our representatives in this way is not great. The members of our legislature sometimes seem to feel that personal appeals for support are not in order and the matters presented in bills should be considered in committee hearings and then left for judicial consideration.

The experiment in Illinois will be watched with interest. It may be that a new method of approach will secure better results.

THE DRUG HABIT.

A REPORT laid before the Assembly of the League of Nations in September, 1922, points out that as, long as dangerous drugs are produced in quantities exceeding the legitimate requirements, a great danger exists that the surplus will find its way into illegitimate channels, observes the *New York Medical Journal and Medical Record*. This view was endorsed by the Assembly of the League.

The task is to ascertain what the legitimate requirements of these drugs are. Sir William Collins made a small contribution to this knowledge by finding that, at a particular London hospital treating some 138,000 patients annually, the consumption of opium in one year was less than thirteen pounds, and of morphine less than five ounces. Moreover, it was recently ascertained that at ten large London hospitals which treated more than 70,000 in-patients and more than 550,000 out-patients in the year 1921, the amount of opium used was less than 42 pounds, of morphine less than 5½ pounds, and of cocaine a little over nine pounds. Of the hundreds of thousands of kilograms of opium raised, and of the tons of morphine manufactured and exported annually, there must be a large margin available for illegitimate and pernicious purposes.

THE "COMMONHEALTH."

VOLUME 10, No. 1, of this publication has been distributed.

The leading article, by Commissioner Eugene R. Kelley, M.D., gives a concise history of health conservation, placing especial emphasis on the importance of modern general education that embraces information relating to sanitary matters. Credit is given to the value of better knowledge pertaining to the relationship of the insect world to the production of disease, the extension of food resources, transportation and improved standards of living. It is quite consistent for the Commissioner to tell of the importance of better health agencies, for we must all endorse the claim that the dissemination of knowledge of scientific health measures has occu-

pied a commanding position in improving the well-being of the race.

The statistical record quoted is impressive in its demonstration of improved conditions. The articles by Prof. George C. Whipple and Charles T. Bruce on the mosquito problems present in concise form the facts relating to these pests. Other matters of news are interesting.

Hereafter the *Commonhealth* will be published quarterly rather than bi-monthly, in the interest of economy.

UNITED STATES PUBLIC HEALTH SERVICE.

THE SCHOOL NURSE.

THE school nurse, says the U. S. Public Health Service in a recent release, should have good health, sound ancestry, tactful and equable temperament, and love for and understanding of children. In addition to her regular training and health work she would better have some experience in public health nursing, in the essentials of nutrition, and in school sanitation. If she also possesses some knowledge of matters that seem more properly to belong to the work of the school physician, so much the better.

In general, one nurse should be assigned to from 1000 to 2000 pupils, the exact number depending on the physical conditions prevailing in the school district. In rural communities lack of funds usually compels an increase in the quota of children assigned to one nurse. If the school nurses are under the jurisdiction of the health authorities, public health and school work can be combined, thus greatly reducing duplication in home visiting; in this case the quota assigned to one nurse might be reduced to 500.

The "routine" duties of each school nurse, whether working with a full time or a half-time health officer, comprise (1) A daily meeting, preferably in the morning, in a room set aside for the purpose, for the inspection, instruction, and disposition of all children referred to her who are suspected to be suffering from communicable diseases, from parasitic skin infections, or from any complaint calling for emergency help; (2) frequent inspections of class rooms for discovering unreported cases of communicable diseases, and for noting the cleanliness, temperature, ventilation, and illumination of rooms and the seating of the pupils; (3) giving health instruction to pupils and to teachers; (4) doing follow-up work; and (5) observing the sanitary condition of the school buildings and grounds.

Special duties depend a good deal on whether the school physician is working on whole or half time. Where whole-time physicians are employed the work of the nurse is commonly confined to assisting them; where volunteer or half-time physicians are employed her work may include much wider duties, which are, of course, done under the physician's direction. Most usual among such duties is that of making physical inspections for the detection of the more obvious defects of children and the referring of children found to be handicapped to the physician for confirmation of diagnosis and for advice as to proper treatment.

Other special duties, such as holding special classes, open-air schools, and school clinics, are rarely undertaken in cities except by physicians. In rural districts, however, where the demand for health work is much greater than the supply, the nurse will often be called upon to act as representative of the state health officer in the control of communicable diseases and in giving instruction on posture, nutrition and general health.

On taking charge a nurse should (1) make contact with the county and local health officers and endeavor to correlate her duties with the other health activities of the district; (2) learn the prevailing state laws in regard to communicable diseases and medical inspection; (3) establish friendly relations with influential persons and organizations interested in the work.

After making a preliminary survey to ascertain the location and accessibility of her schools, the number of pupils, the coöperation to be expected from teachers, etc., the nurse should prepare a schedule for her visits to the different schools, so that the day and hour of her coming will always be known in advance to teachers, parents and pupils. Such a schedule will be of very great help to her in discharging her arduous duties. More detailed information on the subject is contained in Reprint No. 783 of the U. S. Public Health Service.

The fundamental and acquired equipment of the school nurse as set forth in this circular is ideal, but, unfortunately, is not often found. Only persons who have had a liberal education could measure up to this ideal, and the question comes to mind whether, all things being equal, the time spent in a nurses' training school and certain other special forms of education by these public health nurses could not have been given to the regular study of medicine, so that the position requiring so much maturity of mind and knowledge of medicine could be filled by a woman physician.

There is already a strong feeling that nurses are doing too much work that properly belongs to a physician, and since the progress in medical practice is tending strongly in the direction of public health or preventive medicine, those functions which call for the exercise of a judicial mind trained in the fundamental departments of medicine should be carried on by doctors.

Early in the development of professional nursing the nurse was trained to apply the details of the care of patients. She had to conform

to accepted standards of procedure. She was a certain type of technician skilled in the employment of certain tools and trained to use appropriate methods of treatment under direction and supervision. She was expected to report obvious abnormal appearances. Otherwise, she was a good nurse if she pleased the patient and was loyal to the doctor. It was not expected that she would interpret symptoms or make diagnoses.

With the advent of educated women into this profession, the whole scheme of nursing changed, and among the well-endowed training schools nurses are taught more medicine in many ways than was found in the curricula of medical schools two generations ago.

This higher education of the nurse has proved to be beneficial to all concerned in certain cases, and yet in some ways is disappointing. It is true that the well-educated nurse is competent to do many things that doctors themselves want to do. Any well-trained nurse can clean a simple incision and apply stitches. In ordinary uncomplicated cases she can recognize common diseases and knows what to do for them. She wants to use her powers, and when sure of herself enjoys demonstrating her knowledge; but the exercise of her ability does at times put her in competition with the doctor, and that creates antagonism. Hence the attitude of a considerable number of physicians is distinctly reactionary, and the feeling has developed that the graduates of our higher-grade training schools are more nearly physicians than is necessary or even desirable.

It is quite true that there should always be training schools that will prepare nurses for teaching and executive positions, but to demand of all these schools standards higher than are necessary to develop good average nurses is a serious question, because the public and physicians need more nurses, especially of the grade suitable for private duty work. So long as many of our nurses are trained to fill positions requiring ability to use independent judgment, these graduates will seek these more remunerative positions, which provide for regular hours and continuous service, and will not be content to work in the homes of patients. The conclusions of certain committees, as, for example, found in Dr. Lovett's report, have indicated the advisability of reducing the time given to training nurses, with special post-graduate courses for the specialists in nursing.

If we are to follow the ambitious plans of some nursing organizations the conditions will become more complicated. May it not be better to advocate more general employment of physicians for school work, with the nurses occupying less prominent positions, thereby confining the practice of medicine more strictly to physicians?

Miscellany.

NOTES FROM THE WORCESTER DISTRICT MEDICAL SOCIETY.

THE regular March meeting of the Worcester District Medical Society was called to order at St. Vincent's Hospital, March 14, by Dr. George E. Emery, President.

The program consisted of papers by members of the staff of the hospital. Dr. M. J. O'Meara read an exhaustive paper on "The Neuroses."

Dr. A. E. O'Connell read a paper on "X-Ray Evidence of Gall-Bladder Pathology." He said, in part, that the x-ray evidence of gall-bladder pathology may be divided into direct and secondary findings. The direct evidence is the showing of an indisputable, definite gall-bladder shadow, with or without stones. Only a certain percentage of gallstones can be demonstrated in x-ray films. Many gallstones are even of lesser density than the bile, and therefore cast negative shadows. A well-defined gall-bladder shadow is important evidence of biliary infection. The lower border of this shadow should be well outlined and the kidney shadow should be demonstrated. Otherwise it is possible to mistake the lower pole of the kidney for a gall-bladder shadow. A normal gall-bladder in some cases will cast an indefinite light shadow in a good roentgenogram.

Secondary evidence of gall-bladder pathology is the changes which the diseased gall-bladder produces in the shape and function of the barium-filled stomach and duodenum. These x-ray findings are an angulation of the second portion of the duodenum, due to adhesions of gall-bladder origin and pressure defects and spasms of the gastric antrum and duodenal bulb. An x-ray examination of the gall-bladder should always include a stomach examination. An x-ray interpretation of gall-bladder pathology is a safe diagnosis when the evidence of a visualized gall-bladder is substantiated by secondary findings of changes in shape, position and function of the gastric antrum and duodenum.

Dr. J. W. Cahill presented two cases of tumor of the pituitary body and explained the ocular symptoms found in both before the operations. Dr. M. J. Fallon read a paper on Pasteur.

The papers were freely discussed. The Sisters of the Hospital invited the Society to lunch, which was enjoyed by all. On motion of Dr. Getchell a vote of thanks was given the Sisters for their invitation.

The Wachusett Medical Improvement Society met Tuesday evening, April 17, 1923, at Holden District Hospital. The following papers were read and discussed: "Acute Ethmoiditis: Report of a Fatal Case," G. Arnold Rice, M.D.; "Congenital Malformations of the Last Lumbar

and First Sacral Segments," Frank W. George, M.D.

At the March 30th meeting of the staff of Worcester City Hospital the program was contributed by the interns and was as follows: "A Study of Ten Cases of Encephalitis Lethargica," Dr. Coleman; "A Few Interesting Notes on Digitalis Therapy," Dr. Nichols; "Vital Capacity," Dr. Locke; "A Report of Four Interesting Cases," Dr. Barton; "Carbuncle of the Lip," Dr. O'Brien.

One hundred and fifty special auto emblems for the Worcester District Medical Society have been distributed among the members of the Society. As there has been request for more, the committee has ordered fifty additional, which will probably be delivered in about a month.

Dr. John Prentice Rand died at his home, Holden, Mass., April 15, of dilatation of the heart, following a brief illness.

Dr. Rand was born in Francistown, N. H., November 8, 1857, son of Thomas P. and Lydia (Wheeler) Rand. He graduated from the New York Homeopathic Medical College in 1883. He practised for several years in the town of Monson and, since 1905, in the city of Worcester. From 1903 to 1910 he was a trustee of the Massachusetts State Sanatorium at Rutland. He was physician to Worcester Hahnemann Hospital, Holden District Hospital, and consulting physician to Westboro State Hospital. He was lecturer at Boston University School of Medicine, member of the American Institute of Homeopathy, member of the National Association for the Study of Tuberculosis, ex-President of the Massachusetts Surgical and Gynecological Society, ex-President of the Massachusetts Homeopathic Medical Society, member of the Wachusett Medical Improvement Society, and President of the Alumni Association of the New York Homeopathic Medical College, and of Flower Hospital. He was a member of the Masonic, and other social organizations.

Dr. Rand possessed rare literary talent and was a contributor to medical and lay journals. In 1910-12 he was associate editor of the *North American Journal of Homeopathy*. He is survived by his wife and one son.

SUFFOLK DISTRICT ANNUAL MEETING.

THE Annual Meeting of the Suffolk District Medical Society was held Wednesday evening, April 25, 1923, at the Boston Medical Library.

A committee of three was appointed, with an appropriation of $200, to arrange for another public meeting similar to that held in Ford Hall last fall, at which the subject discussed was "Animal Experimentation." A committee of three, with an appropriation of $50, was also appointed to canvass the Society for the sale of Dr. Burrage's new History of the Massachusetts Medical Society. It was voted that newspaper reporters should be invited to certain meetings at the discretion of the officers, and it was also voted that a Committee of Public Information be appointed.

Then followed an extremely interesting series of talks on "The Treatment of Syphilis, Past, Present and Future." This was introduced by Dr. Abner Post, who was enthusiastically welcomed, and gave a short and delightful résumé of the subject. Dr. K. G. Percy spoke on "Prenatal and Early Congenital Syphilis," and Dr. Henry J. Perry on "Early Acquired Syphilis." Dr. William D. Smith emphasized the dangers, and at the same time the possibilities of good results, in the arsphenamine treatment of "Visceral and Vascular Syphilis." He stated instances where the use of arsphenamine, first of all, in extensive visceral lesions, was productive of great harm. Dr. Harry C. Solomon spoke on "Advances in Neurosyphilis." Dr. Timothy J. Leary discussed the pathological results following the ill-advised use of arsenic preparations. There was an interesting discussion led by Drs. Philip Sylvester, William H. Waters and James B. Ayer.

The following officers were elected for 1923-24: President, J. S. Stone, M.D.; Vice-President, C. M. Smith, M. D.; Secretary, L. H. Spooner, M.D.; Treasurer, John C. Rock, M.D.; Commissioner of Trials, Channing Frothingham, M.D.; Councillor for Nominating Committee, W. H. Robey, M.D.; Alternate, David Cheever, M.D.; Librarian, E. C. Streeter, M.D.; Committee on Supervision, F. W. Stuart, M.D., James B. Ayer, M.D.

Committee on Social Meetings: A. A. Hornor, M.D., A. W. Allen, M.D., L. J. Cummins, M.D., T. K. Richards, M.D.

Censors: T. J. O'Brien, M.D., R. H. Vose, M.D., G. A. Leland, Jr., M.D., F. H. Lahey, M.D., H. S. Loder, M.D.

Councillors: S. H. Ayer, M.D., G. M. Balboni, M.D., J. W. Bartol, M.D., J. B. Blake, M.D., V. Y. Bowditch, M.D., R. Bonney, M.D., J. T. Bottomley, M.D., E. G. Brackett, M.D., J. E. Briggs, M.D., M. E. Champion, M.D., D. Cheever, M.D., L. J. Cummins, M.D., W. H. Devine, M.D., G. B. Fenwick, M.D., C. Frothingham, M.D., J. E. Goldthwait, M.D., G. S. Hill, M.D., W. C. Howe, M.D., J. C. Hubbard, M.D., H. T. Hutchins, M.D., H. Jackson, M.D., D. F. Jones, M.D., E. A. Locke, M.D., F. T. Lord, M.D., F. B. Lund, M.D., D. Macomber, M.D., G. B. Magrath, M.D.; R. H. Miller, M.D., J. J. Minot, M.D., T. J. O'Brien, M.D., C. F. Painter, M.D., E. H. Place, M.D., A. Quackenboss, M.D., E. Reynolds, M.D., W. H. Robey, M.D., D. D. Scannell, M.D., C. L. Scudder, M.D., C. M. Smith, M.D., J. S. Stone, M.D., E. W. Taylor, M.D., L. P. Tingley, M.D., F. H. Williams, M.D.

R. H. MILLER.

PLYMOUTH DISTRICT MEDICAL SOCIETY.

THE annual meeting of the Society for 1923 was held Thursday, April 26, at 11 a.m. After the business portion of the program, Dr. Edwin A. Locke of Boston spoke on "Sera Treatment of Lobar Pneumonia," illustrated by lantern slides.

The nominating committee for officers for 1923 brought in the following report: President, Frank H. Burnett, Brockton; Vice-President, Joseph H. Lawrence, Brockton; Secretary-Treasurer, Wallace C. Keith, Brockton; Commissioner of Trials, Gilman Osgood, Rockland; Orator for 1924, Henry L. Doherty, Stoughton.

Censors: Fred J. Ripley, Supervisor; James H. Drohan, Walter W. Fullerton, E. J. Beaulieu, Lawrence B. Reed.

Councilors: Frank G. Wheatley, nominating; Wallace C. Keith, alternate; Gilman Osgood, Fred J. Ripley, Nathaniel K. Noyes.

INTERNATIONAL CONFERENCE ON STANDARDIZATION OF SERUMS.

IN December, 1922, *Science* reports, the second international health conference to discuss the standardization of serums and serum reactions was held in the Pasteur Institute, Paris, under the chairmanship of Professor Madsen, president of the Health Committee of the League of Nations. The transactions were carried on by subcommittees, the first of which dealt with the standardization of tetanus and diphtheria antitoxins. These investigations are nearly complete.

A second subcommittee took up the question of dysentery serum. The largest subcommittee, under Bordet and Wassermann, discussed the serodiagnosis of syphilis. Two other subcommittees are engaged in investigation of the antipneumococcus and antimeningococcus serums. With the antimeningococcus serums, serotherapy is much complicated by the fact that there are several different types of causative agent, and corresponding variations in antibodies. Cultures and serums of the various types of organisms are being exchanged by the laboratories conducting the investigation. This is an important practical question, for in the opinion of Professor Newfeld, who writes the report, the antimeningococcus serum is possibly the most effective therapeutic serum yet used in the treatment of human diseases.

FOOD RESEARCH AND STALE BREAD.

OLD ideas of how bread stales are overturned by the Food Research Institute, established at the suggestion of Herbert Hoover, in its first publication just issued from its headquarters at Stanford University. The report points out the wholesomeness of the stale loaf, shows the waste produced by the present bakery practices, and urges further investigation of why some bread keeps better than others.

The assumption that staleness is caused by the loss of moisture from the loaf is not tenable, for the report points out that what probably occurs is that much of the moisture in the bread is held by the starch which has been gelatinized in the baking. As the loaf comes out of the stove, this starch jelly distributed through the bread contains all the moisture it can hold. As the bread cools, the starch gives up some of its moisture, and this moisture is absorbed by the other constituents of the loaf, changing the crust from a brittle material that crunches between the teeth to a soft and pliable one, while the gluten of the crumb is given a toughness and firmness which as fresh bread it did not have. The bread becomes stale at low temperatures and this accounts for the fact that bread when stale, but not dry, can be freshened up by heating. The process is reversed and the starch-jelly reabsorbs the moisture from the other bread constituents.

Losses to wholesale bakers on account of the arrangement by which they take back the stale unsold loaves from retailers run into millions of dollars a year, the report states. This tends to raise the price of bread to consumers. Before the war the bakeries often lost 6 to 10 per cent. and sometimes 25 per cent. from returns of stale loaves, and many a baker has fed his ovens with this wholesome food as a fuel.

Bread a day old is quite as nutritious and to some people more digestible than that freshly baked. If consumers realized this, and bakers were not obliged to accept returns, the country would greatly gain by the economy.—*Science.*

AMERICAN RELIEF ADMINISTRATION.

AMERICAN charity has done much for Russia in the zone of famine, but it has given Russia something more precious than bread, from the standpoint of hygiene and disease prevention. The most outstanding indication of this phase of American relief work is the very material decrease in the magnitude of winter disease epidemics. In one district, Samara, the medical division of the American Relief Administration reports the incidence of typhus to be actually one-sixtieth of that existing a year ago.

This miracle has not been accomplished without the most painstaking effort on the part of the medical personnel of the A. R. A. It has meant long trips into remote districts—inspections that frequently subjected the inspectors to the most malignant of diseases—and a constant uphill fight against ignorance and its consequent evils.

Typhus, cholera, malaria, relapsing fever, ty-

phoid and numerous minor diseases have all come under the scrutiny of American doctors, and each has been dealt a heavy blow by American preventive measures. Preparations are already under way for another wholesale inoculation this spring, district by district.

Up to the present time the A. R. A. has supplied 18,600 hospitals, ambulatories, children's homes and other institutions, having a total capacity of a million persons, with surgical instruments, medicines, equipment and all the essentials necessary for their maintenance. It has made possible the continued operation of many of these institutions by the free distribution of food to the medical personnel as well as to patients, and it has raised the standard of them all, which has resulted in their being able to provide facilities for the prompt isolation and effective treatment of those suffering from infectious and other diseases. To children's homes the A. R. A. has issued bedding, blankets, clothing, gowns, medicines, drugs, soap and disinfectant through the medical division, while in these institutions alone it is feeding approximately 300,000.

The magnificent gift, made possible by Red Cross and Army surplus medical stores, amounting to $7,600,000, has been the most important single factor in the reduction of Russia's fatal epidemics, according to Dr. Henry Beeuwkes, chief of the medical division, A. R. A. Russian Unit. The large immune population, decreased travel, elimination of the refugee movement, improved living conditions with decreased vermin infestation, and the improved food situation have been secondary factors.

News Items.

THE LAWRENCE MEDICAL CLUB.—The monthly meeting of the Club was held Monday evening, April 23, with Dr. John Parr, at Red Tavern, Methuen. Chairman for the evening, Dr. G. B. Sargent. Subject: "Water Supply and Purification," by Mr. H. W. Clark, State Department of Health.

MASSACHUSETTS GENERAL HOSPITAL.—A Clinical Meeting of the Out-Patient Staff was held in the lower out-patient amphitheatre, Wednesday, April 25, at noon. The program was as follows: "X-Rray Treatment of Skin Conditions," Dr. C. Guy Lane; "Quartz Lamp Therapy," Dr. E. L. Oliver; "The Work of the Community Health Association," Dr. R. D. Curtis.

NEW HEALTH COMMISSIONER OF NEW YORK CITY.—Dr. Frank J. Monaghan, who has succeeded Dr. Royal S. Copeland as Commissioner of Health, has been Deputy Commissioner for four years.

Dr. Monaghan is a native of New York and was educated in the New York public schools and the Long Island College Hospital. After having practised for one year in Oneonta, he removed to Brooklyn, where he has practised ever since. He entered the service of the city in January, 1918, as Secretary of the Department of Health, and in August of the same year was made Sanitary Superintendent and Deputy Commissioner.

INTERNATIONAL ASSOCIATION OF MEDICAL MUSEUMS.—At the meeting of the American and Canadian section of the International Association of Medical Museums last month in Boston, officers were elected as follows: Dr. F. B. Mallory, president; Dr. H. T. Karsner, of Cleveland, first vice-president; Dr. H. E. Robertson, of Rochester, Minnesota, second vice-president; Major James Coupal, of Washington, third vice-president; councilors, Dr. A. S. Warthin, of Ann Arbor; Dr. James Ewing, of New York; Dr. W. G. MacCallum, of Baltimore; Dr. William Boyd, of Winnipeg; Dr. H. S. Haythorne, of Pittsburgh; Dr. Carl V. Weller, of Ann Arbor; Dr. Stuart Graves, of Louisville; Dr. G. R. Callender, of Manila, P. I.; Dr. L. J. Rhea, of Montreal; Dr. Oscar Klotz, of Toronto; Dr. H. Marshall, of the University of Virginia; secretary-treasurer, Dr. Maude E. Abbott, of McGill University; assistants, Dr. H. N. Segall and Dr. E. L. Judah, of Montreal.—*Science.*

Correspondence.

HANS JACOB AMMANN.

Geneva, April 15, 1923.

Mr. Editor:

To read again the testimony of an old-time traveller, in the years preceding the Thirty Years War, is an opportunity for historical comparison of the most suggestive kind. This is offered to us today by the *Reise ins Globte Land*, by Hans Jacob Ammann, recently published in a fine re-edited form by his descendant, August F. Ammann.

Hans Jacob Ammann was clearly "a character." Born in 1586 at Thalwyle, a small town on the lake of Zurich, his ambition was to become a "barber." But the barbers of his day were also surgeons, such as Ambroise Paré, surgeon to three kings of France, of Georges Mareschal, Seigneur de Bièvre, who from apprentice-barber became the personal surgeon of Louis XIV. However, when he had acquired a wide reputation as a skilful practitioner, Ammann would never be otherwise than "der Thalwyler Schärer," namely "The Barber of Thalwyl," although by this title it must not be inferred that there was anything in common between him and Beaumarchais' hero.

Ammann was of the opinion that medicine is not acquired by books, but by practice and that the physician should be a traveller (perambulus). Hence, at the age of seventeen he set out, not for the universities, but to see other countries. He visited Rome, Strasbourg, and perhaps France, and he remained in Vienna for four years. It was in this city that he became acquainted with a Greek, Negroni by name, who had been commissioned to take to the Sultan, from the Emperor of Germany, the presents which were intended to maintain the then recently concluded peace. In his quality as physician, Am-

mann became attached to the embassy which left Vienna on June 2, 1612. The travellers reached Constantinople on August 22, and, as the Sultan Ahmed I delayed receiving the imperial envoys for some time, Ammann had sufficient leisure at his disposal for visiting the city and studying the customs of the inhabitants.

However, when the mission had been fulfilled, Ammann did not return to Vienna with the embassy, and at the end of the following December he, in company with a Dutch noble, Peter Graffe by name, set off for Palestine. They were accompanied by an Armenian connected with the customs service, some Turkish merchants, and two bare-footed monks.

This motley troupe crossed Asia Minor, went from Antioch to Syria and at length reached Damascus. They then took the route which, from Galilea ends at Jerusalem, arriving in the city of David in the midst of Easter festivities. It is really marvelous how much Ammann saw in the short space of three weeks; he accomplished more than the heroine of Eleanor Glynn! Not only did he conscientiously visit all the sanctified places in Jerusalem and its neighborhood, but he even went on to the Black Sea and the banks of the river Jordan.

Finally, duly provided with a Latin attestation of his travels given him by a certain Frater Angelus at Messina, and "guardian of the Holy Land," he set off with his friend Graffe and two Italians, for Egypt, following along the Mediterranean coast from Gaza to Cairo. They saw the Pyramids, the Nile and, on June 6, 1613, they embarked at Alexandria for Europe. By a miracle, their ship escaped both Turkish pirates and tempests, arriving at Messina on June 29.

From Messina, the tale, if not the traveller, becomes precipitate and one only finds a few notes on Naples, Rome, and Venice, up to the date of September 21, when our hero notes: "I have by the grace of God, happily reached the old and honorable city of Zurich, my beloved country, and where I have the joy of finding all my dear ones in good health."

At this time Ammann was twenty-seven years old. By his travels he developed tempered character, an open mind and an extensive culture. He settled in Zurich, soon acquiring the *bourgeoisie*, and where with skill and charity he practised surgery. But he was of very independent mind, therefore he had difficulties with the ecclesiastical authorities who reproached him for not frequenting the church and for speaking of the Reformers with not all the respect that was due them.

Yet, for all this, Ammann was a good Christian, perhaps even a mystic. He declares that he "had Jesus Christ in his heart and that the principal thing is to accord one's life with his doctrine." At length protected by Breitinger, the antistes, and better still by his reputation as a skilful and generous man, he was finally allowed to follow his religion in quiet. He withdrew to Thalwyl, after which he occupied his time in writing his family history and cultivating his vineyard. He died in 1658, at the age of seventy-two years.

In 1618, at the express request of his friends, Ammann had published his *Reis ins Globte Land*. That the book had an immense success can be most readily understood.

I have already referred to the geographic outline of his travels but, could space permit, much could be said of the author's observations on architecture, customs of peoples he studied, etc. He braved European public opinion by declaring that he preferred heathen Turks to Christian Greeks, the former being faithful to their word and tolerant for other religions. Time has unquestionably changed the psychology of the Turk!

Ammann had no great opinion of the knowledge possessed by the physicians he met and he says: "I have met few physicians who had a taste for chemistry (*die Scheidekunst*) and who had a philosophic mind."

In 1630, there was a new edition of the book, followed by a third in 1678, this one being posthumous. These editions are rarissime, and are practically extinct.

CHARLES GREENE CUMSTON,
Lecturer on the History of Medicine and Medical Philosophy in the University of Geneva.

THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

April 23, 1923.

Mr. Editor:

The Dean of the Jefferson Medical College makes announcement of the election of Dr. Withrow Morse, Professor of Physiological Chemistry in West Virginia University School of Medicine, to the position of Professor of Physiological Chemistry and Toxicology in the Jefferson Medical College.

Doctor Morse was born in Dayton, Ohio, May 7, 1880. He received his early education in the schools of Ohio and obtained his baccalaureate from the Ohio State University in 1903, followed by the Master's degree in 1904. In 1909 he received the degree of Doctor of Philosophy from Columbia University, after which he was appointed to the J. P. Morgan Professorship at Trinity College, Hartford, Conn. In 1913 he became instructor in the Medical School of the University of Wisconsin. In 1916 he was made physiological chemist to the Michael Reese Hospital in Chicago, thereby becoming a member of the Nelson Morris Institute for Medical Research, and chemical pathologist to the hospital and to the Sarah Morris Hospital for Children under the same institution. In 1918 he was invited to accept the chair of physiological chemistry in West Virginia University School of Medicine, where he has successfully taught for the past five years. He is a member of the American Chemical Society, the American Society of Biological Chemists, the Biochemical Society of London, England, and the Society of Experimental Biology and Medicine.

ROSS V. PATTERSON, *Dean.*

SPRINGFIELD ACADEMY OF MEDICINE.

573 State Street, Springfield, Mass.
April 26, 1923.

Mr. Editor:

I am enclosing a list of officers elected April 10 at the Springfield Academy of Medicine:

President, Dr. John M. Birnie, 27 High Street, Springfield.

First Vice-President, Dr. Harry F. Byrnes.

Second Vice-President, Dr. Richard S. Benner.

Secretary, Dr. James A. Seaman, 573 State Street, Springfield.

Treasurer, Dr. Ira N. Kilburn, 40 High Street, Springfield.

Directors for five years, Dr. John M. Tracy, Dr. Theodore S. Bacon.

Censor for five years, Dr. Richard A. Rochford.

Dr. Alexis Carrel of the Rockefeller Institute, New York City, read the paper of the evening on "The Physiological Function of the White Blood Cells."

Tuesday, May 8, Dr. Barton Cooke Hirst of Philadelphia will deliver the talk of the evening, the subject of which has not as yet been announced.

JAMES ALPHEUS SEAMAN, *Secretary.*

ACCOMMODATIONS FOR MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY.

Mr. Editor:

I am sending hotel rates in Pittsfield, Lenox and Dalton for members who wish reservations for the Annual Meeting, June 12 and 13. Lenox and Dalton

are each about four miles from Pittsfield, with excellent roads.

The Berkshire Committee would be pleased to have these printed in the JOURNAL, with your permission. Members can engage rooms direct with hotels, at present, and as Chairman of the Committee for Accommodations, I would care for members having any difficulties.

P. J. SULLIVAN, M.D.

Dalton, Mass.

PITTSFIELD.

	Single	Double
Maplewood (Headquarters) American Plan		
Without Bath		$7.00
With Bath		9.00
American House, European Plan		
Bowl and Pitcher	$1.50	2.50
Running Water	2.00	3.00
With Bath	4.00	6.00
Wendell Hotel, European Plan		
Running Water	$2.50 each	
With Bath	3.00 each	
Twin Beds	4.00 each	

LENOX.

Curtis Hotel, American Plan .... $6.00 a day and up

DALTON.

Irving House, European Plan
Double ..... $1.50 apiece
Single ..... 2.50 apiece
Breakfast, 75c.; Dinner and Supper, $1.00
Highlawn Farm, American Plan, $20 to $30 a week.

NOTICES.

THE NORFOLK DISTRICT MEDICAL SOCIETY.

SEVENTY-THIRD ANNUAL MEETING.

BELMONT SPRING COUNTRY CLUB, BELMONT, MAY 8, 1923.

William J. Walton, *President.*
Bradford Kent, *Secretary.*

ORDER OF EXERCISES.

6.45 P. M. Sharp.

Business Meeting.

1. Minutes of previous meeting.
2. Report of Committees.
3. Report of Treasurer.
4. Election of Officers.
5. Incidental Business.

Dinner 7.15 P. M. Sharp.

Diverging from the usual custom, the Executive Committee decided to hold the annual meeting this year away from the crowded city, and get out where good country air and green field can be enjoyed.

Arrangements have been made with the Belmont Spring Country Club whereby the Norfolk District Medical Society can have the use of their club privileges from 2.30 to 9 P. M., May 8.

This includes golf, tennis and a baseball game under the direction of Dr. Charles F. Stack of Hyde Park. The golf players will please phone Dr. William C. Emery, Dorchester 0069.

Throw your troubles aside for one afternoon and evening and put your golf clubs, tennis racket or baseball equipment in your car and hike out to Belmont for a half holiday.

Good music and an excellent dinner await you after the meeting.

In case of rain come just the same, for the orchestra will entertain you in the spacious quarters of the club house.

There will be an assessment of two dollars and fifty cents.

Following is the Nominating Committee's list of nominations for 1923-1924:

President, Dr. William W. Howell, West Roxbury; vice-president, Dr. Carleton S. Francis, Brookline; secretary, Dr. Bradford Kent, Dorchester; treasurer, Dr. G. W. Kaan, Brookline; commissioner of trials, Dr. John E. Fish, Canton; nominating councillor, Dr. D. N. Blakely, Brookline; Dr. D. G. Eldridge (alternate), Dorchester.

Censors: Dr. E. T. Rollins, supervisor, Jamaica Plain; Dr. T. J. Murphy, Roxbury; Dr. G. G. Bulfinch, Brookline; Dr. A. A. MacDonald, Dorchester; Dr. W. A. Griffin, Sharon.

Councillors: Dr. E. H. Baxter, Hyde Park; Dr. D. N. Blakely, Brookline; Dr. H. K. Boutwell, Brookline; Dr. J. A. Ceconi, Dorchester; Dr. D. G. Eldridge, Dorchester; Dr. J. E. Fish, Canton; Dr. A. N. Foster, Dorchester; Dr. G. H. Francis, Brookline; Dr. Maurice Gerstein, Roxbury; Dr. A. H. Hodgdon, Dedham; Dr. F. C. Jillson, Jamaica Plain; Dr. G. W. Kaan, Brookline; Dr. Bradford Kent, Dorchester; Dr. C. J. Kickham, Brookline; Dr. J. S. H. Leard, West Roxbury; Dr. Edward Martin, Roxbury; Dr. J. S. May, Roxbury; Dr. E. T. Rollins, Jamaica Plain; Dr. Victor Safford, Jamaica Plain; Dr. C. F. Stack, Hyde Park; Dr. D. F. Sughrue, Roxbury; Dr. Eugene Thayer, Roxbury; Dr. L. F. Vickery, Jamaica Plain; Dr. H. F. R. Watts, Dorchester; Dr. G. W. Winchester, Mattapan.

Respectfully submitted,
JOHN S. H. LEARD,
Chairman Nominating Committee.

NEW ENGLAND HOSPITAL ASSOCIATION, SECOND ANNUAL MEETING, MAY 16 AND 17, 1923.

RHODE ISLAND MEDICAL SOCIETY BUILDING, 106 FRANCIS STREET, PROVIDENCE, R. I.

WEDNESDAY, MAY 16, 1923.

10.30 A. M. Executive Session.

11.00 A. M. "Fuel Oil." Dr. John M. Peters, Superintendent, Rhode Island Hospital, Providence, R. I.

Discussion—Dr. Frederic A. Washburn, Director, Massachusetts General Hospital, Boston, Mass.

11.30 A. M. "The Hospital as a Factor in Rural Community Life." Mr. Benjamin Williams, President, Vermont Hospital Association, Proctor, Vt.

Discussion—Dr. George H. Stone, Eastern Maine General Hospital, Bangor, Me.

12.00 N. "The Contagious Problem of the General Hospital." Dr. Edwin H. Place, Physician-in-Charge, South Department, Boston City Hospital, Boston, Mass.

Discussion—Dr. Dennett L. Richardson, Superintendent, Providence City Hospital, Providence, R. I.

2.30 P. M. "The Responsibility of the General Hospital in the Control of Venereal Disease." Miss Ora M. Lewis, Department of Syphilis, Massachusetts General Hospital, Boston, Mass.

Discussion—Dr. Thomas S. Brown, Medical Superintendent, Mary Fletcher Hospital, Burlington, Vt.

Round Table.

THURSDAY, MAY 17, 1923.

10.30 A. M. "The Service of the Out-Patient Department to the Community." Dr. Charles E. Wells, Assistant Director, Massachusetts General Hospital, Boston, Mass.

Discussion—Dr. William O. Rice, Rhode Island Hospital, Providence, R. I. Dr. James R. Miller, 179 Allyn Street, Hartford, Conn.

11.00 A. M. "The Problem of the Hospital Employee." Mr. Charles Lee, Superintendent, Waterbury Hospital, Waterbury, Conn.

Discussion—Dr. J. F. Bresnahan, Superintendent, Bridgeport Hospital, Bridgeport, Conn.

11.30 A. M. "Some Aspects of Modern Nursing." Miss Jessie E. Catton, Superintendent, New England Hospital for Women and Children, Boston, Mass.

Discussion—Dr. W. C. Rappleye, Superintendent, New Haven Hospital, New Haven, Conn.

12.00 N. Election of Officers.

2 to 5 P. M. Visiting local hospitals. Members of the Association are invited to visit the following hospitals: Butler Hospital, Rhode Island Hospital, St. Joseph's Hospital, Woonsocket Hospital, Memorial Hospital, Providence City Hospital, Rhode Island Homeopathic Hospital, Providence Lying-in Hospital, Newport Hospital.

NEW ENGLAND SECTION, CLINICAL CONGRESS OF AMERICAN COLLEGE OF SURGEONS.

The third annual meeting of the New England Group of the Fellows of the American College of Surgeons will take place at the Hotel Bancroft in Worcester, Mass., on May 15 and 16.

There will be morning clinics at the various hospitals both days.

The afternoon of the 15th will be given over to a scientific meeting on the subject of hospitals.

The evening meeting, Tuesday, May 15, will be a conference on the subject of hospitals, open to the public, at which Dr. George E. Brewer, Father Mouliniere and other prominent speakers from out of town will give addresses.

The afternoon meeting of the second day will be devoted to scientific papers to be presented by visiting and local surgeons.

Morning clinics will be arranged in general surgery, gynecology, eye, ear, nose and throat, orthopedics, urology, obstetrics, neurology, laboratory, radium, x-ray, industrial surgery, and occupational therapy.

The four hospitals at which clinics will be held are the City Hospital, Memorial Hospital, St. Vincent's Hospital and Hahnemann Hospital. In addition Dr. William A. Bryan of the Worcester State Hospital for the Insane offers the courtesy of his hospital to any visitors who are interested in the surgical aspect of his work and in the development of occupational therapy at the institution.

Surgeons from out of town will kindly state to the committee in charge their time of arrival in Worcester and the accommodations at the Hotel Bancroft which they will require. Reservations will be made by the local committee. As the clinics begin early on Tuesday morning, May 15, it is suggested that guests arrive on May 14 when possible.

The stated meetings will be held at the Hotel Bancroft, where headquarters is to be establsihed. All Fellows will please register at headquarters on arriving in town.

Committee in charge: Homer Gage, M.D., chairman; Ernest L. Hunt, M.D., counsellor; Edgar C. Fisher, M.D., William F. Lynch, M.D.

For the Committee,

KENDALL EMERSON, *Secretary.*

ESSEX NORTH DISTRICT MEDICAL SOCIETY.

The 82nd annual meeting will be held in Russell Hall, Y. M. C. A. Building, 40 Lawrence Street, Lawrence, Wednesday, May 9, 1923. Dinner will be served at 12.30 o'clock, sharp. After the dinner the business meeting will occur. Following the business meeting these papers will be presented:

John Lovett Morse, M.D., of Boston, Professor of Pediatrics, Emeritus, Harvard University Medical School, upon "A Discussion of Recent Tendencies in Infant Feeding." (30 minutes.)

Herman A. Osgood, M.D., of Boston, X-Ray Department of the Boston City Hospital, upon "Focal Infection." (30 minutes.)

After the papers have been read they will be open for discussion and each speaker is limited to five minutes.

G. B. Sargent, M.D., of Lawrence will open discussions of Dr. Morse's paper, and T. R. Healy, M.D., of Newburyport and C. J. Burgess, M.D., of Lawrence, of Dr. Osgood's.

The Massachusetts Medical Society holds its annual meeting at Pittsfield, Mass., June 12 and 13. This is a delightful two to four days' trip by outomobile or train. Families are invited. Notify A. P. Merrill, M.D., Pittsfield, secretary Berkshire District Society.

The American Medical Association holds its annual session in San Francisco, June 25 to 29. A splendid chance to see our country. A minimum of three weeks is required. Summer tourist fares are low.

A meeting of the censors will be held at Hotel Bartlett, 59 Main Street, Haverhill (Tel. 8710), on Thursday, May 3, at 2 P. M., sharp. Candidates should present their diplomas to the secretary one week in advance.

FREDERICK D. MCALLISTER, M.D., *President.*
J. FORREST BURNHAM, M.D., *Secretary.*

THE BOYLSTON MEDICAL SOCIETY OF HARVARD UNIVERSITY.

There will be a Special Meeting of the Society in the Amphitheater of the Peter Bent Brigham Hospital on Friday evening, May 11, at 8.15 o'clock. The two dissertations which have been awarded the Boylston Prizes for this year will be read by their authors, and the prizes will be distributed.

PROGRAM.

1st Prize Dissertation: Motion Picture of Serial Sections. W. F. Schreiber, H. M. S. 1923.

2nd Prize Dissertation: Malignant Lymphoma, a Radiographic Study.
Lester R. Whitaker, H. M. S. 1923.

The discussion of these papers will be opened by Dr. J. L. Bremer, Dr. S. B. Wolbach and Dr. G. W. Holmes.

Graduate members of the Society are invited to attend.

REGINALD FITZ, *President,*
P. A. CHANDLER, *Secretary.*

WORCESTER DISTRICT MEDICAL SOCIETY.

The annual meeting of the Worcester District Medical Society will be held at the Worcester Tatnuck Country Club, at 6 P. M. Wednesday, May 9, 1923.

Following the business meeting the banquet will be served. After the banquet the annual oration will be delivered by Dr. Albert G. Hurd of Millbury. Subject, "Can You Beat It?"

A. W. ATWOOD, *Secretary.*

ESSEX SOUTH DISTRICT MEDICAL SOCIETY.

The Censors of the Essex South District Medical Society will meet for the examination of candidates at the Salem Hospital, at 2 o'clock on Thursday, May 3, 1923. Applications should be made to R. E. Stone, Secretary, 221 Cabot Street, Beverly, Mass.

BRISTOL SOUTH DISTRICT MEDICAL SOCIETY.

There will be a meeting of the Bristol South District on May 3, at 5 P. M. Dr. Paul D. White of the Massachusetts General Hospital will be the reader. Subject, "Heart Pains."

A. J. Abbe, *Secretary.*

NEW ENGLAND PEDIATRIC SOCIETY.

The eightieth meeting of the New England Pediatric Society will be held at the Boston Medical Library, on Friday, May 11, 1923, at 8:15 P.M.

The following papers will be read:

1. Spinal and Cranial Injuries of the Baby in Breech Deliveries. A Clinical and Pathological Study of thirty-eight cases. Richard N. Pierson, M.D., New York.

2. Cerebral Hemorrhage of the Newborn. Richard S. Eustis, M.D., Boston.

3. The Feeding and Development of Premature Infants. Warren R. Sisson, M.D., Boston.

Light refreshments will be served after the meeting.

Oscar M. Schloss, M.D., *President.*
Lewis W. Hill, M.D., *Secretary.*

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C. .....July 9, 1923
At Chicago, Illinois .....July 9, 1923
At San Francisco, Cal. .....July 9, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written, and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

H. S. Cumming, *Surgeon-General.*

CASES REPORTED TO MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH.

Week Ending April 21, 1923.

Disease	*No. of Cases*	*Disease*	*No. of Cases*
Actinomycosis	1	Ophthalmia neonatorum	8
Anterior poliomyelitis	1	Pneumonia, lobar	101
Chicken-pox	121	Scarlet fever	357
Diphtheria	131	Septic sore throat	2
Dog-bite requiring anti-rabic treatment	4	Suppurative conjunctivitis	7
Encephalitis lethargica	3	Syphilis	38
Epidemic cerebrospinal meningitis	3	Trachoma	6
German measles	33	Tuberculosis, pulmonary	107
Gonorrhea	93	Tuberculosis, other forms	21
Influenza	10	Typhoid	6
Malaria	2	Whooping cough	335
Measles	748		
Mumps	246		

SOCIETY MEETINGS.

The annual meeting of the Massachusetts Medical Society will be held in Pittsfield, June 12 and 13.

DISTRICT SOCIETIES.

A list of society meetings is herewith published. This list will be changed on information furnished by the secretaries of the societies, and will appear in each issue.

Barnstable District:—Hyannis, May 5, 1923.
Bristol South District:—Fall River, May 3, 1923.
Essex North District:—Lawrence, Y. M. C. A. Building (Annual Meeting), May 9, 1923.
Middlesex East District:
May 9, 1923:—Annual Meeting.
All meetings except the Annual Meeting will be held at the Harvard Club in Boston. A. E. Small, Secretary.
Worcester District meetings are scheduled as follows:
May 9, 1923:—Annual Meeting and banquet.

STATE, INTERSTATE AND NATIONAL SOCIETIES.

New England Pediatric Society:—Meeting May 11, at Boston Medical Library.

May, 1923:—Massachusetts Society of Examining Physicians (date and place undecided). American Pediatric Society meeting, May, 31, June 1 and 2, 1923, at French Lick Springs Hotel, French Lick, Ind.; H. C. Carpenter, Secretary.

May, 1923:—Boston Association of Cardiac Clinics. Meeting May 17, 1923, at 8.15 P. M., Children's Hospital. Subject: Rheumatism and Chorea and Heart Disease.

June, 1923:—The Nineteenth Annual Meeting of the National Tuberculosis Association will be held in 1923 in Santa Barbara, Calif., from June 20 to 23, inclusive, in the Recreation Center.

June, 1923:—American Medical Association, San Francisco, June 25-29, 1923; Olin West, Chicago, Ill., Secretary.

July, 1923:—Massachusetts Association of Boards of Health, July 26, Nantasket; W. H. Allen, Mansfield, Mass., Secretary.

October, 1923:—Boston Health Show will be held in Boston, October 6-13, inclusive.

October, 1923:—Meeting of the American Health Association will be held in Boston, October 8-13, inclusive.

For list of Officers of the Massachusetts Medical Society, see page xii of the Advertising Section.

ARRANGEMENTS OF THE SALT LAKE COUNTY MEDICAL SOCIETY FOR THE ENTERTAINMENT OF VISITORS.

The Salt Lake County Medical Society is arranging for the entertainment of visitors who may be able to stop over en route, either going to or coming from the meeting at San Francisco The stopover here can be made inexpensive. Our Society has already appointed committees to greet and assist in making arrangements to see the city and, if possible, some of the surrounding territory, which may include wonderful mountain drives; a visit to Saltair, which is situated on Great Salt Lake; and a visit to the great copper mines in this vicinity.

Large parties intending to make this stopover are requested to give us notice as far in advance as possible as to the number in party and length of time of stopover. Any inquiries relative to this matter may be directed to Secretary Dr. Floyd F. Hatch, Deseret Bank Building, Salt Lake City, Utah.

CENSORS' MEETINGS.

The Censors for the several districts will meet for the examination of applicants for fellowship on the first Thursdays of May and November.

The Censors for the Suffolk District will examine applicants residing in that district and also applicants who are non-residents of Massachusetts.

Applicants for fellowship should apply to the Secretary of the District Society of the district in which they reside (have a legal residence) at least one week before the date of a given examination, taking with them their degrees in medicine.